HOLLISTER, CA

Complete Streets Plans to Remove Cultural Barriers for Transitioning Neighborhoods











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Map 1: South Bay Area



Executive Summary

Initiated in fall of 2019 the Complete Streets
Plans to Remove Safety and Cultural Barriers
for Transitioning Neighborhoods (the Plan)
identifies future design and implementation
strategies that can be utilized to plan, design
and maintain streets that are safe for users
of all ages and abilities. The project focuses
primarily on four key corridors that have experienced much of the City's growth over recent
years. The corridors, which include Buena Vista
Road, Santa Ana Road, Meridian Street and
Memorial Drive are designed, in their current
state, to promote vehicle traffic. As a result,

traffic often moves very quickly and therefore presents safety challenges for persons who may be walking or biking along a particular corridor. This project seeks to ameliorate these situations by putting forth future "complete street" strategies that can either be incorporated as new developments are added along the corridors or undertaken as part of a City driven capital improvement effort. As a companion to the four corridors the Plan takes a comprehensive look at a future green street network that can promote walking and biking connections to local schools, parks and other community services.

The project kicked off with a series of community engagement activities that identified complete street design concepts for the four corridors. The community specifically expressed a strong desire for safer streets with lower vehicles speeds, high-quality facilities for pedestrians and cyclists, and the need to focus efforts to improve safety and walkability near school zones. In addition, the community expressed a strong desire for walkable community destinations to public green spaces.

In response to community and stakeholder input the Plan establishes three goals that are also used as the Plan's organizing framework.

Goal One: Safe, Comfortable, and Inviting Streets for All Users

Goal Two: Compact and Walkable Neighborhoods

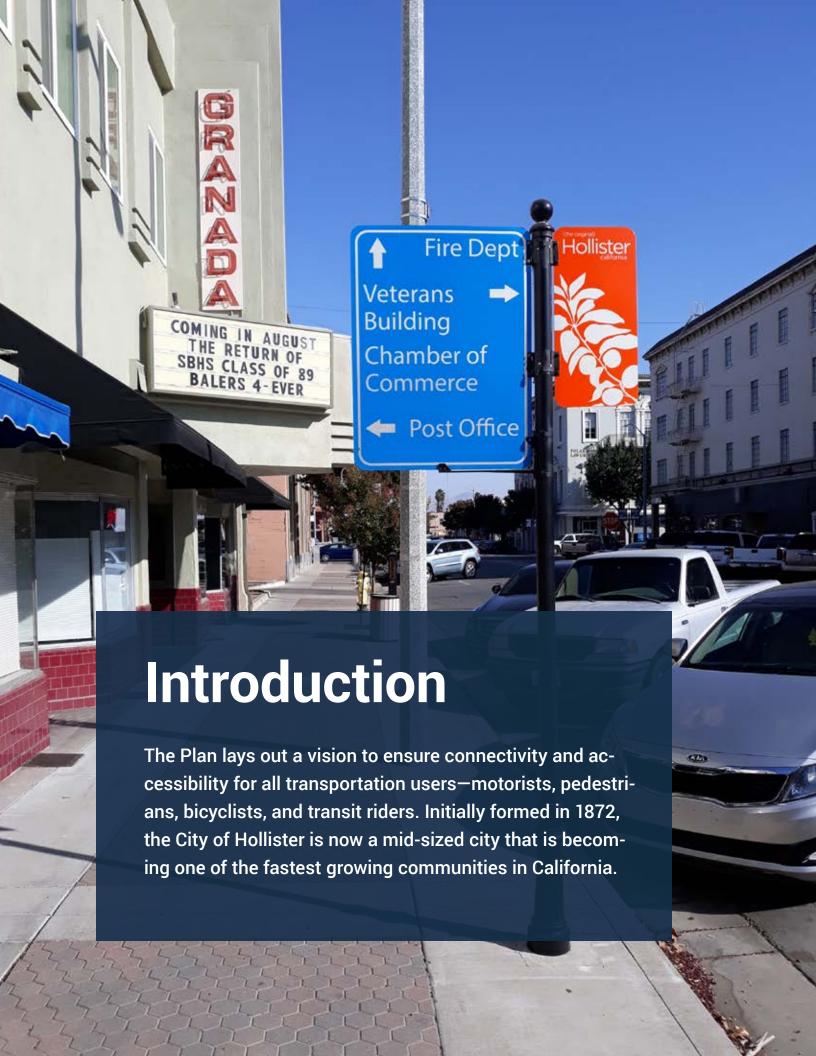
Goal Three: Network of Public, Green Spaces

Goal One targets opportunities and constraints within each of the four corridors and identifies both near and long-term plans for how the corridors may be improved to achieve the goal of making them safe, comfortable and inviting. This section includes illustrative cross-sections and renderings that depict how the streets might look in the future. The section also includes cost estimates for the suggested short-term improvements. Detailed concept plans for each corridor are included in Appendix A: Attachment D.

Goal Two expands the conversation to include guidelines for both the public right-of-way and future project developments. The public rightof-way guidelines cover such topics as lane widths, bikeways, curb extensions and sidewalk improvements that collectively can contribute to a safer and more comfortable walking and biking experience. The guidelines for project developments focus on topics such as block size, building orientation, density and on-site parking that together can further enrich the experience of someone walking and biking. The scale and design of streets and developments plays a large role in how we move about. Wide streets with long blocks and buildings that face away from the street encourage a greater level of vehicle activity whereby narrower streets, with shorter blocks and buildings oriented towards the street encourage and support increased walking and bicycling.

Goal Three concludes the document by identifying a series of potential local streets and paths that connected together with the Plan's four corridors can establish a Network of Public, Green Spaces. Future improvements could include such enhancements as bulb-outs, chicanes and street trees. To encourage initial utilization of this new network the Plan puts forth a recommendation for a series of pop-up events. The pop-ups could include temporary improvements such as traffic cones, sign boards and other moveable elements to further "open" the street for bikes and pedestrians while simultaneously slowing car speeds in these areas.

The Plan concludes with a series of suggested next steps that layout a future implementation timeline and identifies prioritized improvements.

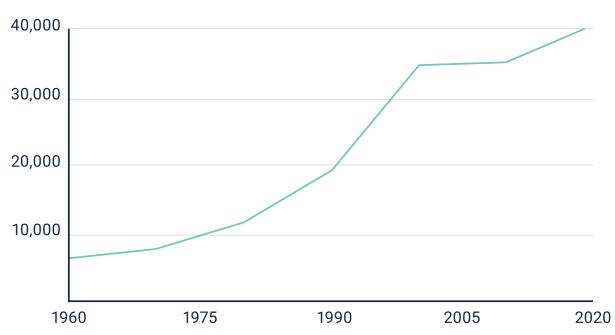


As of 2019, the estimated population in the City of Hollister is 39,749 community residents with a median age of 33.2. The population of Hollister has grown 13.8 percent since 2010. Hollister has more than tripled its population within the last quarter century. Since 1960, the City of Hollister, as seen in the Figure 1, has exponentially grown. Between 1990 and 2000, Hollister experienced a dramatic 79 percentpopulation increase. Hollister is likely to see a continued population growth as the regional demand for housing continues to intensify. As this growth has occurred the City has transformed from its original, relatively compact and walkable scale to one that increasingly reflects a more suburban pattern of wide streets and disconnected land uses that favor the automobile over pedestrian and other active forms of mobility.



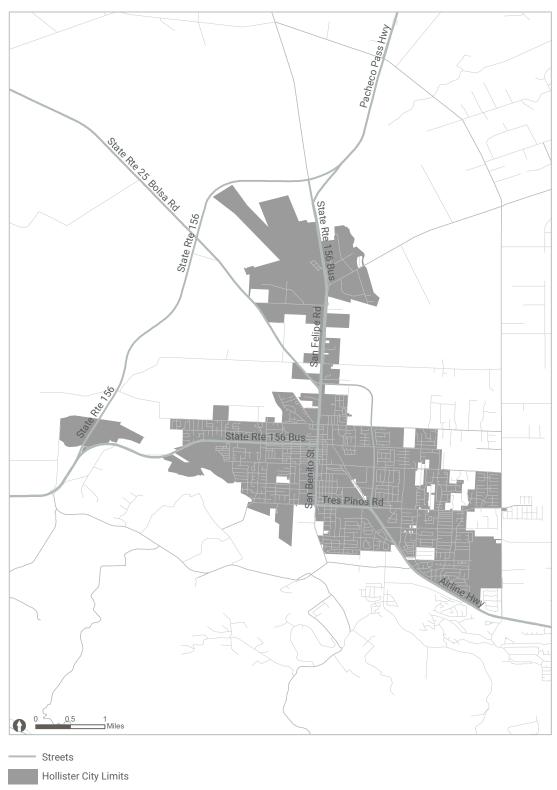
Relatively narrow sidewalks, wide roadways, and adjacent land uses that do not interact with the street all contribute to an auto-centric landscape.

Figure 1: Hollister Population Growth 1960-2019



Source: "Census of Population and Housing". Census.gov. Retrieved April 3, 2020.

Map 2: Hollister City Limits







The majority of the roadways in the City of Hollister are two lane roadways with a few three lane and four lanes. Streets in Historic Downtown Hollister form a dense and walkable network of blocks. As Hollister expanded, much of the new development is oriented away from the street, comprised of large block sizes, and cul-de-sac style streets. A decrease in intersection density has resulted in newer areas

of Hollister being less walkable. In response to this concern the City has developed this Complete Streets (Plan) for four key corridors that have been the focus of much of the recent growth:

- 1. Buena Vista Road
- 2. Santa Ana Road
- 3. Meridian Street
- 4. Memorial Drive



THE HOLLISTER COMPLETE STREETS GOALS INCLUDE:



Safe, Comfortable and Inviting Streets for All Users. Provide an integrated multi-modal transportation network that meets the needs of vehicles, transit, bicycle, and pedestrians throughout the City of Hollister.



Compact and Walkable
Neighborhoods. The Plan
recognizes the need to
create a comprehensive
set of design guidelines
that govern the design
and layout of new locally controlled streets,
blocks and development
projects to ensure that
future growth allows for
and promotes a healthy,
sustainable and walkable
community.



Network of Public Green Spaces. Building connectivity and accessibility to public green spaces will link homes, community destinations, and parks to create a healthy green network.

The purpose of this Plan is to build upon the opportunities identified through the community engagement process, to deliver a set of design and implementation strategies, to improve the quality and safety of the four corridors while also setting forth guidance on the design and development characteristics for new development projects as the City expands. This yearlong project is the result of an iterative and collaborative process that is rooted in community and stakeholder engagement. The project team conducted a detailed analysis of the City's transportation networks and land use patterns to identify opportunities and constraints to

develop a set of future complete street scenarios. The vision of the Plan helps create streets that are accessible for people of all ages and abilities and balances the needs of different modes. Complete Streets and the tools they employ celebrate community character, increase access to businesses and community destinations like schools, and create a space for landscaping and street trees to strengthen our urban ecologies. The Plan formalizes a community intent to plan, design, and maintain streets so they are safe for users of all ages and abilities.





Participants at the community design charrette offered many great ideas on how to improve streets.

Public participation has been an important part of this planning effort. A variety of methods were employed to engage residents and stakeholders throughout the process including an array of outreach modes, a multi-day community design charette, and the formation of a Stakeholder Advisory Group. Outreach to the community for this project was conducted in several ways. All written materials were provided in both English and Spanish.

Community Engagment Outreach Approach:

Visioning: Creating a shared vision with goals and objectives along the four corridors.

Identifying opportunities and constraints:

Identify existing safety, connectivity, and comfort issues and opportunities for walking, biking, and other modes of transporation for all users and ability.

Building Consensus: Reaching a consensus on preferred ideas to incorporate into the Plan.



Community members stopped by the open house to share their ideas on what elements comprise a "complete street".

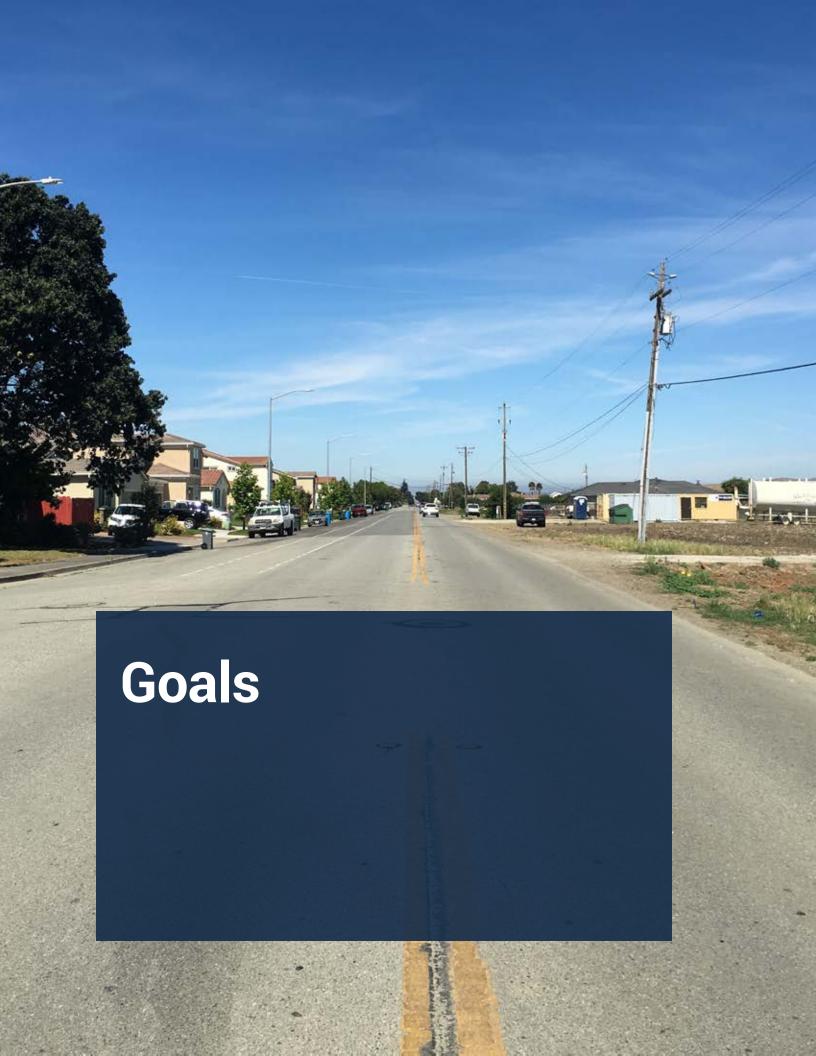
Outreach methods included:

- » Community Design Charette: For one week, the project team of planners, designers and engineers set up a temporary studio in Hollister's City Hall. Members of the public joined the team to develop concepts and alternatives for complete streets along the four corridors. The community expressed the desire for safer streets with lower vehicle speeds, high-quality facilities for pedestrians and cyclists, and the need to focus efforts to improve safety and walkability near school zones. In addition, the community expressed a strong desire for walkable community destinations and streets connectivity to public green spaces.
- » Stakeholder Meetings: The project team also held multiple focus group sessions. This offered an opportunity to discuss issues indepth. Stakeholders expressed concern for the lack of high-quality facilities for pedestrians and cyclists, a lack of vision for key corridors in the community, as well as speed and safety concerns on key corridors in Hollister.

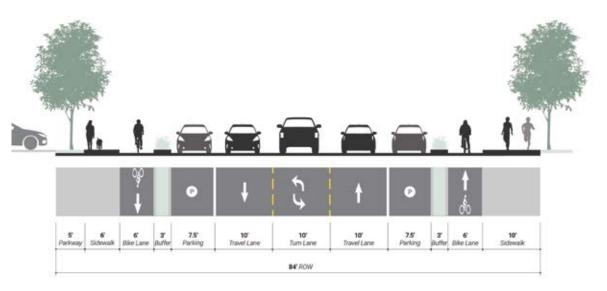
- » Farmer's Market Pop-Up: Community members were asked about the vision and opportunities for key corridors. Some of the key takeaways from the pop-up include community members expressing the importance of parks, street beautification, the desire for pedestrian and bicycle infrastructure, and better infrastructure for students walking to and from school.
- » Community Meetings: The community participated in an exercise in which they discussed street character elements along the key corridors in Hollister. The community expressed the desire for open space connections and connections to community destinations such as retail and dining, and protected walkways with street trees.
- » On-Line Survey: Over a four week period in the spring the community had the opportunity to provide suggestions for a new Green Streets Network. Comments included recommendations for "complete street" improvments to specific intersections.



Booth at the farmers market provided an opportunity for community members to learn about the project and offer suggestions.



Goal 1: Safe, Comfortable and Inviting Streets for All Users



Within a one-half square mile area Downtown Hollister offers a grid network of streets with pedestrian-orientated dimensions and a wide variety of uses serving local community needs. Just a short distance away from Downtown, the street blocks lengthen, the streets widen, and the land-use shifts to predominantly residential neighborhoods. These seemingly small shifts greatly influence the comfort and quality of the built environment. Faced with longer distances to travel, and often long roads without trees, narrow sidewalks and cars whizzing by at faster speeds than they would downtown, residents in these newer areas are more inclined to drive to school, work, or for other daily needs than someone living near the downtown area. This description is particularly applicable to the four corridors that are the focus of this plan. Even in locations where bicycle lanes have been added, the current speed of vehicles creates an uncomfortable walking or bicycling experience.

This plan seeks to remedy this situation by putting forth both near-and long-term implementation strategies and design guidelines that make locally controlled streets safer and more comfortable for all users and that promote walkable neighborhoods that connect to schools, parks and neighborhoods.

The next pages detail suggestions for how each of the four streets that are the focus of this plan can be improved over time. A description of the character of the existing street is provided along with illustrations for how the street might change. Each section also includes a preliminary budget example of the cost of implementing the range of short term strategies. Detailed concept plans that correspond to the budget for each street are provided in Appendix A: Attachment D.

Suggestions for future funding sources that could assist the City in implementing either the short term or long term strategies are described in the Funding Strategies chapter.

BUENA VISTA ROAD



This eastern stretch of Buena Vista highlights the street character where both sides of the street have been developed.

The area immediately abutting the majority of the north side of Buena Vista Road is characterized by large tracts of agricultural and other undeveloped uses while the south side has experienced an influx of new low-density single-family residential developments including an elementary school. The majority of homes are internally facing with wooden fences west of Miller Road and have fewer overhead street lights, which makes for a less inviting area for pedestrians to walk around. In contrast, east of Miller Road homes begin to face the street with additional street lights located closer to each other which makes it for a more walkable

stretch on Buena Vista Road. Sidewalks are also located primarily on the south side of the street with trees along the path and no obstruction of utility lines which provides ample walking space and shade for pedestrians. With the exception of a short section east of Westside Road the north side of Buena Vista Road has no sidewalks, no trees and has utility lines throughout the street which makes it difficult for pedestrians to walk on the north side of the street.

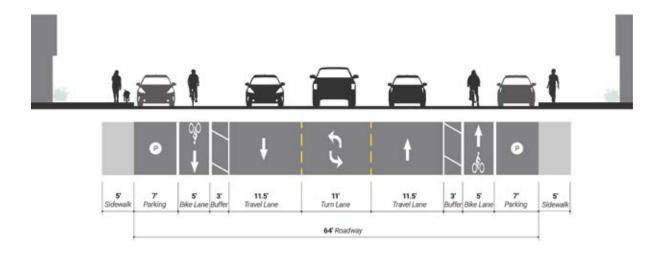


Map 4: Map of Buena Vista and Adjacent Streets



Looking east on Buena Vista with agricultural uses on the north (right) side of the street.

Figure 2: Buena Vista Near Term



Buena Vista Road (from the West City Limit/Beresini Lane to Locust Avenue) has one vehicle travel lane in each direction with an east-bound Class II bike lane. Pedestrian sidewalks are located on the south side of the arterial while the majority of the northern side is not improved. The majority of the intersections on the corridor are unsignalized with stop controls only on the side street approaches. The intersection with Locust Avenue is controlled by an all-way stop. Calaveras Elementary School is located in the middle of the corridor, west of Westside Boulevard. There are no pedestrian crosswalks on Buena Vista Road other than the

school marked but uncontrolled crosswalks at the intersection with Line Street. It should be noted that Buena Vista Road will be extended east to connect with North Street in the future.

The near term vision for Buena Vista includes a transition from four lanes of travel to two lanes of travel with a center turn lane. This shift allows for a buffered bicycle lane. The concept plans included in Appendix A: Attachment D provide details regarding this new striping. The budget provided here represents the costs of implementing the changes outlined in the striping plans in todays dollars.

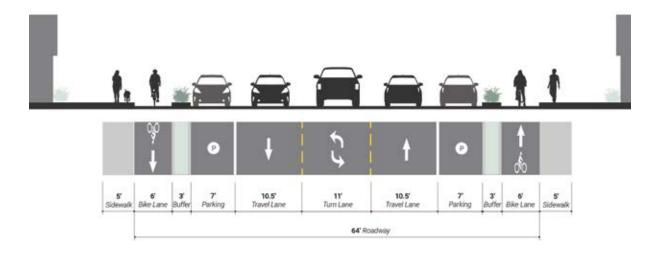
Figure 3: Buena Vista Road (West End to Locust Avenue)

DETAIL	DESCRIPTION	QUANTITY	COST/UNIT	TOTAL COST
22 (LF)	Double Yellow centerline	5900	\$2.00	\$11,800
32 (LF)	Two-Way Left-Turn Lane	840	\$4.00	\$3,360
38 (LF)	Turn Lane Line	0	\$1.50	\$0
(LF)	Buffered Bike Lane	2000	\$3.00	\$6,000
(LF)	Bike Lane	11400	\$2.00	\$22,800
(LF)	Parking T's	0	\$1.00	\$0
(EA)	Arrows	0	\$250.00	\$0
(EA)	Legends	31	\$300.00	\$9,300
(SF)	Continental Crosswalks	4400	\$2.50	\$11,000 *
(SF)	Ladder Crosswalks	0	\$6.00	\$0
	\$64,260			
	\$19,278			
	\$83,538			

^{*} Only 1400 crosses Buena Vista. The other 3000 is parallel to Buena Vista

Note: The quantities outlined are based on the suggested striping plans in Attachment A. Zeros indicate that the improvement is not suggested along the corridor.

Figure 4: Buena Vista Long Term



The long term vision for Buena Vista imagines swapping the location of the parking and bicycle lanes to provide a more protected environment for the bicyclist. This new arrangement also offers a more comfortable experience for the pedestrian as the cars are now further away from the sidewalk. This is particularly helpful in sidewalk areas that do not have a parkway area

or tree canopy to offer additional protection. In this example the bicycle lane is protected by a landscaped median and the parking lane utilizes a permeable surface. Together these elements can offer increased opportunity to capture and retain stormwater. The landscaped area can include native pollinator plants to help provide food and nectar for local species.



This illustration offers an example of how Buena Vista might transform in the future.

SANTA ANA ROAD

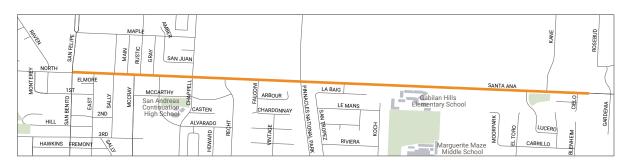


Santa Ana at Highway 25.

The area around Santa Ana Road is the least developed of the four corridors and as a result the roadway has not been built out and/or widened to the extent that the other corridors, especially Meridian and Memorial, have. Development, where it has occurred is predominantly single-family homes that face away from the street and are often located far away from each other with large underdeveloped areas between homes which creates a difficult

setting for walking. Santa Ana Road has little to no sidewalks and provides pedestrians with limited shade and overhead lights which further challenges pedestrians to walk during the day and night time. Furthermore, there are no opportunities to cross the street near Gabilan Hills Elementary School/Hollister Dual Language Academy and no sidewalks west of the school which makes walking to school difficult in the area.

Map 5: Map of Santa Ana and Area Streets



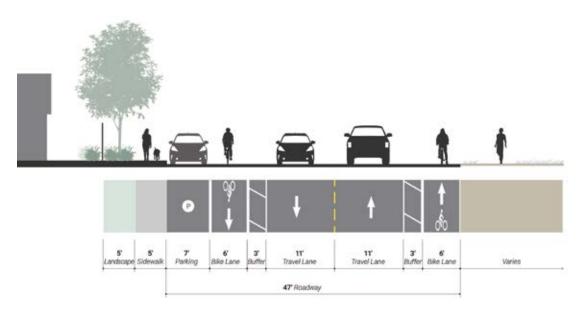






These images offer a glimpse of the character of Santa Ana today.





Santa Ana Road (San Benito Street to the Eastern City Limits) is an east-west arterial. The corridor is primarily a two-lane roadway section east of Highway 25. Parking and sidewalks are provided on both sides of the street to the west while to the east, the northern section is unimproved with no parking. The intersections with San Benito Road, Rustic Street-McCray Street, and State Route 25 are controlled by traffic signals. The Chappell Road intersection is controlled by an all-way stop. Gabilan Hills Elementary School/Hollister Dual Language Academy is located to the east-end of the study segment. There are no bike lanes on the corridor. It should be noted that Santa Ana Road will connect to Buena Vista Road in the future when North Street is extended.

Santa Ana too can benefit from the addition of bicycle lanes to help improve the overall comfort for bicyclists. As has been mentioned, this street is very much in transition and it is recommended that as new developments occur on abutting parcels that they provide sidewalks with parkway landscaping adjacent to the curb area to offer additional protection for pedestrians.

The budget on the opposing page offers an outline of projected costs for completing the new striping suggestions that are illustrated in detail in Appendix A: Attachment D.

Figure 6: Santa Ana Road (San Benito Street to Dual Language Academy)

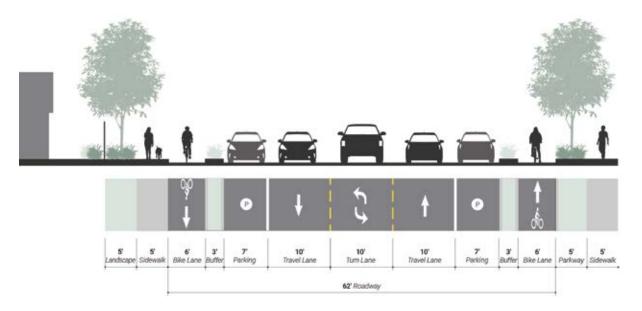
DETAIL	DESCRIPTION	QUANTITY	COST/UNIT	TOTAL COST
22 (LF)	Double Yellow centerline	5200	\$2.00	\$10,400
32 (LF)	Two-Way Left-Turn Lane	0	\$4.00	\$0
38 (LF)	Turn Lane Line	400	\$1.50	\$600
(LF)	Buffered Bike Lane	6800	\$3.00	\$20,400
(LF)	Bike Lane	3400	\$2.00	\$6,800
(LF)	Parking T's	0	\$1.00	\$0
(EA)	Arrows	4	\$250.00	\$1,000
(EA)	Legends	18	\$300.00	\$5,400
(LF)	Basic Crosswalks	1290	\$1.50	\$1,935 *
(SF)	Ladder Crosswalks	2200	\$6.00	\$13,200 t
	\$59,735			
	\$17,921			
	\$77,656			

^{*} About 500 is crossing Santa Ana, the rest is parallel

Note: The quantities outlined are based on the suggested striping plans in Attachment A. Zeros indicate that the improvement is not suggested along the corridor.

[†] Only 500 is on east leg of Santa Ana/San Benito St. 2200 is for all four legs.





The long term vision for Santa Ana suggests a three lane roadway that includes one lane in each direction with a center turning lane. This cross-section offers an ideal "complete street" as it provides additional protections for bicyclists and pedestrians alike while also still providing parking for the vehicle. The addition of parkway areas abutting the sidewalk and a new

landscaped buffer offer more room for plants to support local habitat. Similarly to Buena Vista the parking lane could include a permeable surface to allow for the capture of stormwater. Water running across this surface could also be directed into the landscaped buffer where it could offer additional water for the plants and benefit from the "cleansing" that plants and soil can provide.



Figure 8: Future Vision of Santa Ana at Gabilan Hills Elementary School

A future glimpse of Santa Ana.

MERIDIAN STREET



Looking north across Meridian at the intersection with Memorial Drive.

The neighborhoods around Meridian, east of Chappell are almost exclusively single-family residential with the exception of Marguerite Maze Middle School. The majority of the residential developments in this area are internally facing such that the developments present long expanses of wall to the street which makes for rather bleak and uncomfortable setting for walking. The more western end of the street does include some retail uses but the buildings are typically set back from the street with onstreet parking abutting the perimeter. Unlike

the two previous corridors, Meridian Street has sidewalks on both sides and provides shade and street lights creating a more walkable path. The tall, overhead street lights are located far away from each other, this may cause pedestrians and cyclists to feel unsafe while commuting at night. Utility lines are also located underground which offers pedestrians more space to walk. Additionally, students and parents/guardians are able to walk safely to school as yellow continental crosswalks and truncated domes are found near the area.



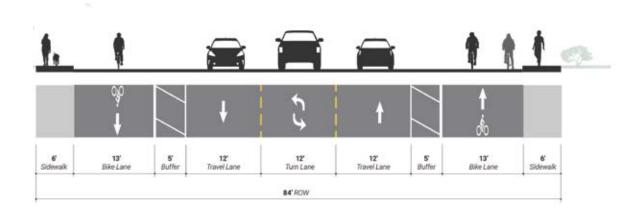
Map 6: Map of Meridian Street and Surrounding Area

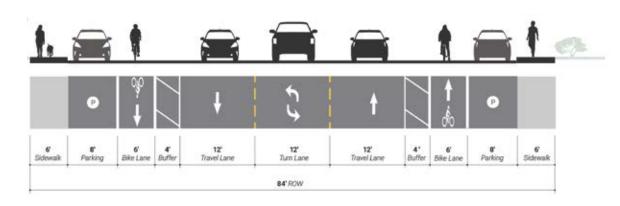


Meridian Street (from San Benito Street to Clearview Drive) is a five lane arterial without bike lanes within a 60 foot pavement section east of McCray Street. To the west of McCray Street, the corridor is three lanes with parking and no bike lanes. There are pedestrian sidewalks on the majority of the corridor except an unimproved section along the southern side, located west of State Route 25. The intersections with San Benito Road and McCray Street and State Route 25 are controlled by traffic signals. The Memorial Drive intersection is controlled by an all-way stop. Marguerite Maze Middle School is located west of the intersection with Memorial Drive.



Figure 9: Meridian Near Term, Section 1





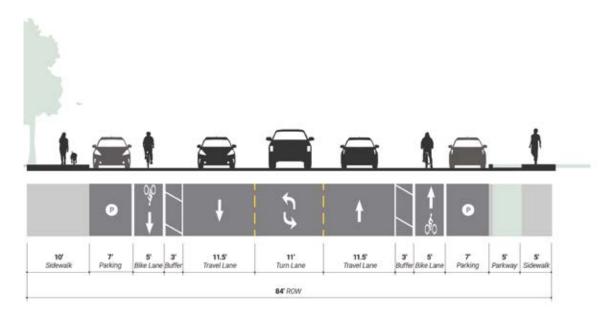


Figure 10: Meridian Near Term, Section 2

Due to the extent to which Meridian changes as it transitions east and away from the downtown area there are several sections illustrated here. All of the sections assume that the street will be striped to provide one lane in each direction and a separate turning lane. This will offer the opportunity to extend the bicycle lane throughout this corridor and provide an additional buffer area to further protect bicyclists from moving vehicles.

The first section highlights the area immediately west of Chappell Road. Two options are provided for this area to highlight the extent of opportunities that are available at this particular location. These options reflect how the corridor might look if a parking lane was added. While parking might seem superfluous here,

given the extent of the surface parking at the properties immediately adjacent to the street the parking lane offers the opportunity for a delivery vehicle to stop in this area without inadvertently stopping in the bicycle lane if it is left abnormally wide.

Further east, Section 2 highlights the portion of Meridian near the Marguerite Maze School. At this location a mid-block crossing is suggested that would further alert cars to the presence of pedestrians through bulb-outs and a Rectangular Rapid Flash Beacon (RRFB) Signal. All of the suggestions put forth here are illustrated in the striping plans included in Appendix A: Attacment D and the potential costs for these improvements are highlighted in Figure 11 on the next page.

Figure 11: Meridian Street (San Benito to East end)

DETAIL	DESCRIPTION	QUANTITY	COST/UNIT	TOTAL COST
22 (LF)	Double Yellow centerline	4500	\$2.00	\$9,000
32 (LF)	Two-Way Left-Turn Lane	3700	\$4.00	\$14,800
38 (LF)	Turn Lane Line	1600	\$1.50	\$2,400
(LF)	Buffered Bike Lane	13100	\$3.00	\$39,300
(LF)	Bike Lane	1020	\$2.00	\$2,040
(LF)	Parking T's	800	\$1.00	\$800
(EA)	Arrows	37	\$250.00	\$9,250
(EA)	Legends	43	\$300.00	\$12,900
(SF)	Continental Crosswalks	1300	\$2.50	\$3,250
(SF)	Ladder Crosswalks	12200	\$6.00	\$73,200
(LF)	Basic Crosswalk	1500	\$1.50	\$2,250
(LF)	Closure of NBL Lane at SR-25	760	\$3.00	\$2,280
(EA)	Bulb-Out, Median Refuge, RRFB System	1	\$50,000.00	\$50,000
	\$221,470			
	\$66,441			
	\$287,911			

Note: The quantities outlined are based on the suggested striping plans in Attachment A. Zeros indicate that the improvement is not suggested along the corridor.

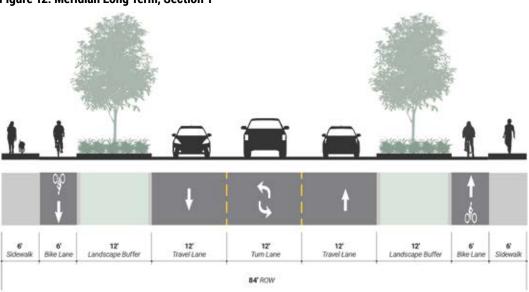
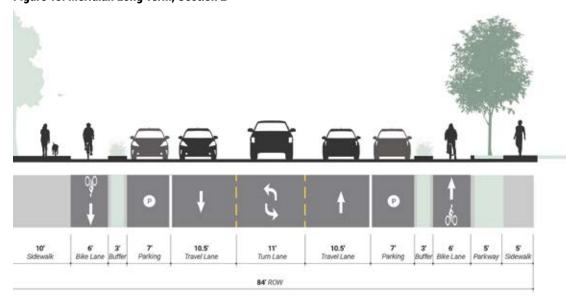


Figure 12: Meridian Long Term, Section 1

Figure 13: Meridian Long Term, Section 2



Both of the long term options proposed for Meridian suggest that the corridor, like Buena Vista and Santa Ana will benefit from the addition of protected bicycle lanes. The image for in Figure 13: Meridian Long Term, Section 2 illustrates too the opportunity to further bolster the improvements that are proposed for the midblock crossing at the Marguerite Maze school. Providing a raised cross-walk can further alert vehicles to the presence of pedestrians, thereby slowing the vehicles and making for a safer pedestrian experience.



Figure 14: Future Vision for Meridian near Chappell Road, Section 1

This rendering illustrates how this very wide section of Meridian could be enhanced with a generous landscaped buffer that would reduce pedestrian crossing distances and provide a more comfortable bicycling experience.



Figure 15: Future Vision for Meridian, Section 2

This illustration sets forth an idea of future improvements to Meridian at the Marguerite Maze School.

MEMORIAL DRIVE



Looking across Memorial Drive at Verdun to Veterans Memorial Park.

The neighborhoods surrounding Memorial Drive are fairly similar to that of Meridian Street. The street is made up of a mix of residential developments that face the street and face internally. Like Meridian Street, Memorial Drive provides sidewalks on both sides and offers some shade and street lights at each intersection which makes pedestrians feel safer to walk. Although, the street has trees that provide shade for pedestrians, trees are spread out unevenly throughout the street. Crosswalks are also located at important community destinations

such as Sunnyslope Elementary and the medical center which allows for pedestrians to safely cross the street. Furthermore, utility lines are located underground which provides pedestrians to have additional space to walk.

Memorial Drive (from Sunset to Meridian Street) is primarily a four lane arterial with no bike lanes within 60 feet of pavement. The intersections with Meridian Street, Hillcrest Road, and Sunset Drive are controlled by all-way stop controls. The intersection at Sunnyslope Road



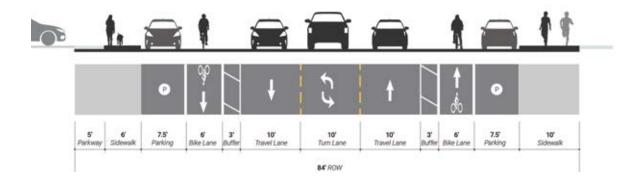
Map 7: Map of Memorial Drive and Surrounding Area



Looking north on Memorial Drive.

is controlled by a traffic signal. The corridor includes five to ten foot sidewalks on both side of the street. Sunnyslope Elementary School is located at the northeast corner with Sunnyslope Road which is also connected to Veterans Memorial Park along the eastern frontage between Hillcrest Road the school. Memorial Drive is planned to be extended in the future between Meridian Street and Santa Ana Road.

Figure 16: Memorial Drive Near Term



Similarly to Meridian Street, Memorial Drive will benefit from re-striping that will transition the street from two lanes in each direction to one lane per direction and a center turn lane. Due to the long, uninterrupted blocks on this stretch three separate locations are recommended to receive mid-block crossing improvements. The addition of the crosswalks, bulb-outs and Rectangular Rapid Flash Beach Signal will improve access across Memorial Drive to the Park and the school. These improvements are accounted for in the budget on the right in Figure 17 and the concept plans in Appendix A: Attachment D.

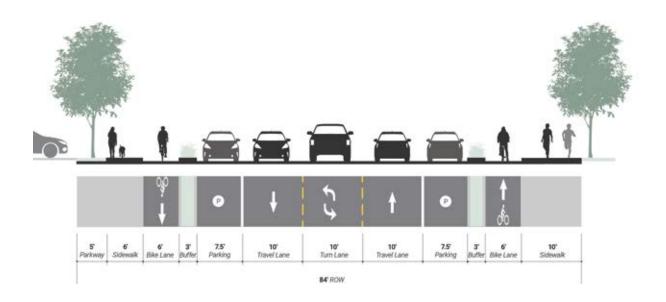
Figure 17: Memorial Drive (Meridian to Sunset)

DETAIL	DESCRIPTION	QUANTITY	COST/UNIT	TOTAL COST
22 (LF)	Double Yellow centerline	1350	\$2.00	\$2,700
32 (LF)	Two-Way Left-Turn Lane	4100	\$4.00	\$16,400
38 (LF)	Turn Lane Line	230	\$1.50	\$345
(LF)	Buffered Bike Lane	11600	\$3.00	\$34,800
(LF)	Bike Lane	0	\$2.00	\$0
(LF)	Parking T's	0	\$1.00	\$0
(EA)	Arrows	4	\$250.00	\$1,000
(EA)	Legends	48	\$300.00	\$14,400
(SF)	Continental Crosswalks	3500	\$2.50	\$8,750
(SF)	Ladder Crosswalks	9850	\$6.00	\$59,100 *
(LF)	Stop Bar	35	\$2.00	\$70
(EA)	Bulb-Out, Median Refuge, RRFB System	3	\$50,000.00	\$150,000
Subtotal				\$287,565
Contingency (30%)				\$86,270
Total				\$373,835

^{*} Includes side streets. Reduce by 1/2 for just Memorial

Note: The quantities outlined are based on the suggested striping plans in Attachment A. Zeros indicate that the improvement is not suggested along the corridor.

Figure 18: Memorial Drive Long Term



In the long-term, all users of Memorial Drive will benefit from the addition of a buffered landscaped area that will protect bicyclists and pedestrians alike. A raised speed table at the mid-block crossings will also provide further safety benefits.



Figure 19: Future Example of Memorial Drive

A future vision for Memorial Drive.

Goal 2: Compact, Walkable Neighborhoods

Map 8: Map of a Portion of Buena Vista



Map 9: Map of a Portion of Santa Ana



The four maps here illustrate the extent to which the surrounding street network and new developments limit the ability to move between neighborhoods without transversing along the arterial. This elimination of a connected, grid of smaller, local streets has severaly impacted the walkability and connectivity of Hollister.

There are multiple ways to integrate people and place in the planning, design, construction, operation, and maintenance of transportation networks while designing a street and its surrounding environs. When applied at the city scale, a wide range of tools are used to create a connected network where certain streets prioritize different modes of travel. For example, streets with shorter crossing distance that include curb extensions allows streets to be

accessible for people of all ages and abilities. Continental crosswalks also help promote safety for pedestrians by reducing vehicle encroachment into the crosswalk and increase pedestrian visibility.

In addition, key corridors that consist of mixeduse development with retail and residential space help support local land uses and economies. These types of streets tend to be no wider than two travel lanes which helps balance the needs of different modes by providing on-street parking and bicycle lanes. A building orientation can have an impact on the walkability of an area as well. For instance, having frequent building entries improves connectivity and breaks down the scale of buildings.

Map 10: Map of a Portion of Meridian



Map 11: Map of a Portion of Memorial Drive



Additionally, street furniture is an important section of the sidewalk that includes lighting, benches, trees, bicycle parking, and may consist of green infrastructure elements such as flow-though planters. These amenities help pedestrians and cyclists feel more comfortable and feel safe while visiting local businesses and waiting for local transit stops. For example, a restaurant's waiting experience can become more comfortable if seating is available for prospective customers.

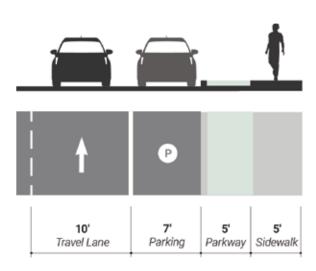
Well-designed streets that are part of a cohesive and connected street grid that offer inviting amenities and are supported a range of uses who front on, and engage with, the sidewalk area have been proven to yield positive economic, environmental, and public health and safety benefits. They celebrate community character, increase access to business and community destinations like parks, schools, and improve transportation options. The following section includes a menu of design treatments for the public right-of-way as well as future development projects that Hollister may apply throughout the city. The following pages are organized into three sections that include the roadway area, sidewalk and project development.

I. PUBLIC RIGHT-OF-WAY

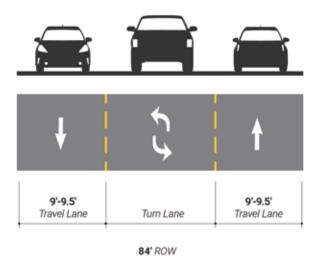
A. ROADWAY

- 1. Target Design Speeds for Safe Pedestrian and Bicycle Travel
 - The maximum target speed for urban arterial streets shall be no more 35 mph.
 - The maximum target speed for urban collector shall be no more than 30 mph.
 - The maximum target speed for local streets within nonresidential or mixeduse areas shall be no more than 25 mph.
 - The maximum target speed for local streets within residential areas shall be no more than 20 mph.
 - e. The maximum target speed for streets within school zones shall be no more than 15 mph.
 - f. Utilize short cycle lengths and/or slow signal progressions in downtown areas and networks with closely spaced signals.

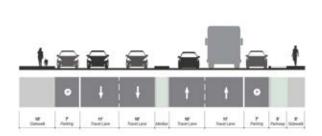
2. Vehicle Travel Lane Widths



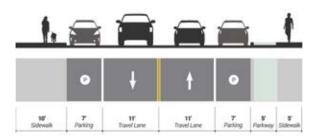
a. General purpose lanes shall typically be ten feet in width.



b. In select cases, narrower travel lanes (nine to nine and a half feet) can be effective as through lanes in conjunction with a turn lane. Additional lane width may also be necessary for receiving lanes at turning locations with tight curves.

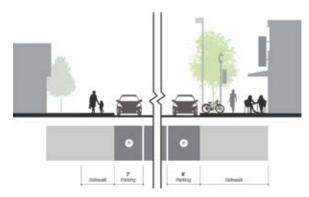


 c. Curb or outside lanes on designated truck and/or bus routes shall be 11 feet in width.



 d. Lanes adjacent to lanes in the opposing direction may be up to 11 feet in width.

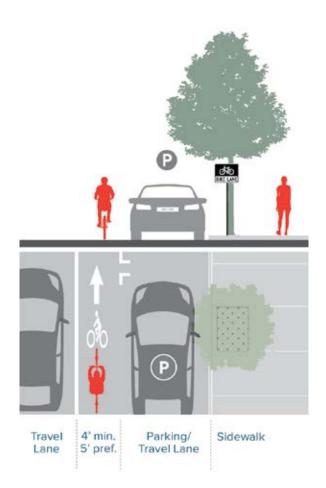
3. On-Street Parking



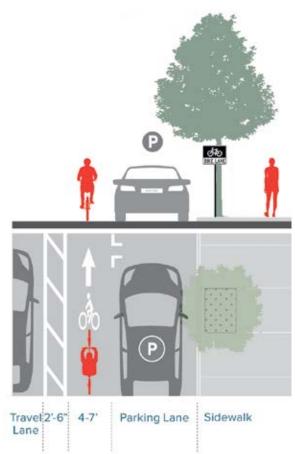
- a. Parking lanes shall be seven feet except in locations with high parking turnover where an eight foot parking lane shall be permitted.
- On-street parking shall be provided on at least 70 percent of both sides of the block length of all new and existing motorized portions of the circulation network, including the project side bordering the circulation network.
- c. The percentage of on-street parking is calculated by dividing the length of street designated for parking by the total length of the curb along each street, including curb cuts, driveways, and intersection radii.
- d. Space within the parking lane that is occupied by corner bulb-outs (within 24 feet of an intersection), transit stops, and motorcycle or bicycle parking may be counted as designated for parking in this calculation.

4. Bicycle Lane (Class II)

5. Buffered Bicycle Lane (Buffered Class II)



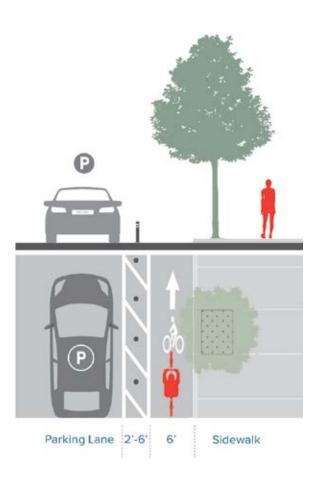
- a. The preferred bike lane width next to a parking lane shall be at least five feet wide. Wherever possible, minimize parking lane width in favor of increased bike lane width.
- Bicycle lane word and/or symbol and arrow markings (MUTCD Figure 9C-3) shall be used to define the bike lane and designate that portion of the street for preferential use by bicyclists.



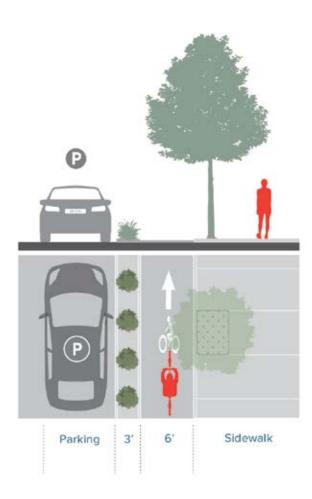
 a. When sufficient roadway space allows consider including a striped buffer of at least two feet- six inches between the vehicle lane and the bicycle lane.

6. Separated Bicycle Lane (Class IV)

At-grade with Vertical Separation



Raised and Vertical Protected

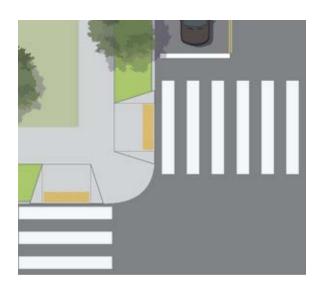


- a. When placed adjacent to a curb or other vertical surface a bicycle lane width shall be no less than six feet in width.
- b. A minimum physical separation of two feet-six inches shall be maintained between the bicycle lane and the parking lane. The buffer space should be used to locate bollards, planters, signs or other forms of physical protection.
- c. Bicycle lane word, symbol, and/or arrow markings (MUTCD Figure 9C-3) shall be placed at the beginning of the lane and at periodic intervals along the facility based on engineering judgment.
- d. Diagonal crosshatch markings may be placed in the neutral area for special emphasis. See MUTCD Section 3B.24.

7. Signal Timing

- a. Adjust signal timing as pedestrian volumes increase.
- Provide pedestrian lead interval signal timing and/or automatic walk (no push) signals at well used intersections.

8. Crosswalks



- a. Continental style (or Zebra) crosswalks and bi-directional access ramps shall be installed on all approaches of signalized and unsignalized intersections using high visible markings. Crosswalks shall be 15 feet wide and include distinct, two foot white painted strips except in school zones where the strips shall be yellow.
- b. Place an advanced stop bar perpendicular to the travel lane in advance of the crosswalk to increase pedestrian safety.

9. Median Refuge

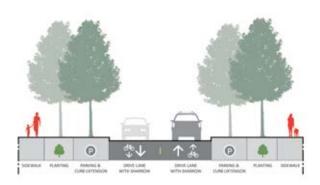


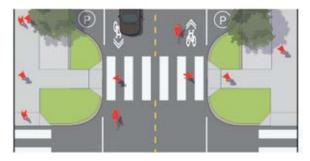
 Implement a median refuge where crossings are long and intimidating to residents.

10. Curb Extensions

Note: 'Curb extensions' is an umbrella term that encompasses several different treatments and applications.

- a. Consider the use of curb extensions at intersections to increase visibility, reduce the crossing distance, reduce the speed of turning movements, and allow for enhancements such as seating or greenery.
- Curb extensions shall include cutthroughs when bicycle lanes are present.

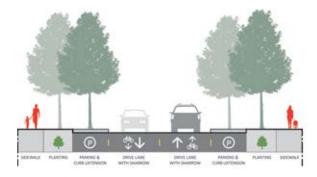




 New developments shall include curb extensions, or neckdowns at the entry to minor streets.

- d. Combine stormwater management features, such as bioswales or rain gardens, with curb extensions to absorb rainwater and reduce the impervious surface area of a street.
 - Stormwater Curb Extension: Use low plantings in bioretention facilities and landscaped curb extensions near intersections to maintain sight clearance; plants should grow no higher than 24 inches above the sidewalk grade. The curb return from bump-out edge to original curb line should be designed to enable street sweeping along the curb edge, typically angled between 30 and 60 degrees relative to the curb line. Steeper return angles will usually require hand-sweeping.
 - Where application of a curb extension adversely impacts drainage, curb extensions may be designed as edge islands with a one to two-foot gap from the curb or a trench drain.

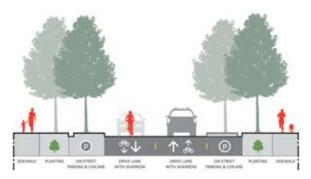
11. Mid-Block Curb Extensions

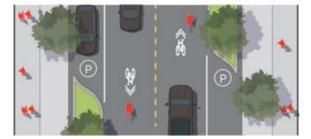




- a. Consider the installation of mid-block curb extensions, known as pinch points or chokers, to facilitate midblock pedestrian crossings.
- b. On low-volume streets these crossings do not need to be marked.
- c. In locations where traffic volumes exceed 2000–3000 vehicles per day or midblock destinations warrant include a marked crosswalk and other enhanced treatments such as a median refuge, and a Rectangular Rapid Flash Beacon (RRFB)

12. Chicanes

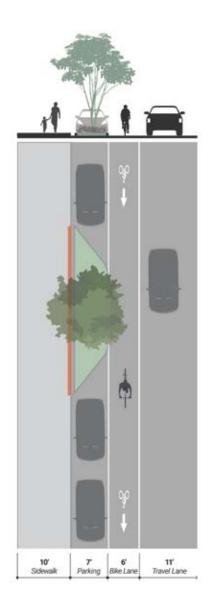




- Consider the use of offset curb extensions, or chicanes, on local, slow moving streets to slow vehicles speeds and create safer, more comfortable pedestrian environment.
- b. Chicanes may be designed using a return angle of 45 degrees, or a more gradual taper and transition, resulting in an S-shaped roadway.

13. Bulb-Outs

a. Consider the installation of bulb-outs, in the parking or curb lane at certain intervals, as a means to introduce street trees in locations where sidewalk width is not sufficient to accommodate a street tree and still maintain a comfortable and accessible walking environment.



B. SIDEWALK AREA

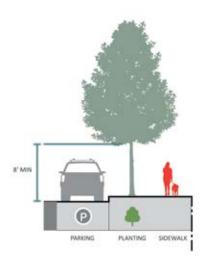
1. Sidewalks

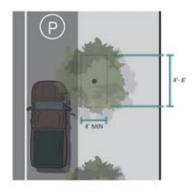




- At-grade crossings with driveways shall account for no more than ten percent of the length of sidewalks within the project.
- All new projects shall provide continuous sidewalks within the project including the project side of circulation network bordering the project.
- c. New sidewalks must be at least 12 feet wide on retail or mixed-use blocks and include a minimum six foot clear pedestrian travel way and a parkway area that accommodates a rhythm of street trees as determined by the City. Tree wells shall be no less than four feet by four feet and shall be four feet by six feet or even four feet by eight feet whenever space allows.
- d. New sidewalks within residential neighborhoods shall be at least 10 feet feet wide and include a minimum five foot clear pedestrian travel way and a five foot landscaping parkway area. Residential parkways shall also include a rhythm of street trees as determined by the City.
- e. Any construction project that obstructs the sidewalk should be mitigated through the provision of a temporary sidewalk that affords a safe and convenient passage or clearly directs users to an equivalent nearby detour.

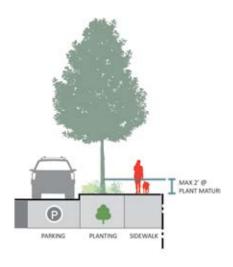
2. Trees in Parkway Area

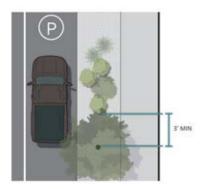




- a. Street trees that provide shade coverage shall be planted in the parkway area of all public rights-of-way.
- Requirements for tree spacing depend upon a number of key factors and should be tailored to the chosen species, standard (or desired) tree pit size, fixed property lines, setback from curb, and integration with street lights and other furniture.
- c. Consider the regional climate and expected future climate changes when selecting tree species.
- d. Three inches of organic mulch shall be placed in the tree well but mulch should be kept clear of the root crown to avoid root rot.
- e. When trees are adjacent to a bikeway, ensure branches do not impede bicyclists; branches that overhang the bikeway or street should hang no lower than approximately eight to 14 feet to the bikeway or street surface.

3. Parkway Area Plantings





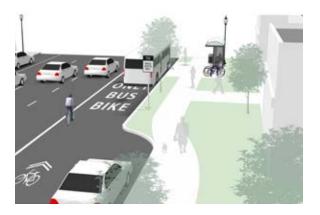
- a. Plant materials shall be drought tolerant or drought resistant
- b. Low growing, turf-substitute ground-cover plants are preferred
- c. Plant materials must be lower than 24 inches in height at full maturity
- Plant materials must not be noxious or invasive; using native plants where feasible.
- e. Plant materials should not have exposed, rigid spines or thorns.
- f. Three inches of an organic mulch should be applied to any exposed dirt areas within the parkway Mulch should be pulled several inches away from the root crown to avoid root rot.
- g. Where appropriate, provide an appropriate inlet to capture runoff and distribute stormwater to support bioretention performance. This may be a curb cut or depression, or a catch basin that circulates water through connected tree boxes using capillary action.
- The abutting property owner shall be responsible for the installation and maintenance of all landscaped parkway improvements.
- i. In cases where the parkway improvements are deemed a nuisance or safety hazard to the public, the City reserves the right to remove the offending improvements and restore the parkway area using City forces.

4. Parkway Area Irrigation

- Any irrigation system installed in the residential parkway area may not include continuously pressurized (main) lines or valves of any sort.
- b. When and where irrigation systems are employed, the City encourages the use of sub-surface drip irrigation or other low-flow water distribution system to minimize wasteful over-spray and over-watering. When and where spray head systems are used within the parkway, all spray heads shall be of the pop-up type, fully retractable to be flush with the adjacent surface when not in use, and placed no closer than 24 inches to any hard-paved, adjacent surface.

5. Bus Boarding Areas

- Install an 11 foot wide concrete pad in travel lane at bus stop to support weight of buses and reduce wear and tear on pavement.
- Provide minimum of ten feet of sidewalk/platform clear zone for loading onto transit vehicles.
- c. Prioritize pedestrian scaled, LED lighting at all bus boarding areas.
- Integrate lighting into bus shelters, existing street poles, and canopy columns to avoid clutter in sidewalk area.



e. Provide adequate waiting space (assume six square feet per person) based on average wait times, passenger volumes, and service frequency.



Bus Boarding Areas cont.

- f. Where insufficient space exists, consider the application of a bus bulb.
- g. Bus bulbs shall be the length of one bus from the front of the vehicle to the back door (e.g., 30 feet). The width should reflect the need for maneuvering and accommodation of bus shelters, at least six feet but preferably eight to ten feet wide. A bus bulb should be roughly equal to the width of the parking lane with a return angle of 45 degrees.
- Provide seating based on need and space available.
- Avoid clutter of street amenities within the boarding area, including the required five foot by eight foot ADA pad at the bus door entrance.
- j. Consider providing tactile cues/elements at bus stop pole and bus boarding locations.
- k. Discourage dirt, graffiti and heat absorption when selecting color and material. Design to dry faster in wet seasons. Should have intermediate armrests to serve disabled passengers and discourage non-transit related uses (e.g. sleeping).

- I. Folding seats and lean bars can be used when space is limited.
- m. Ideally seating is sheltered.
- Shelters shall be placed at the left or right edge of the walkway, but never directly within the path of travel.
- Maintain a clear zone of at least adequate space for wheelchairs within sheltered seating area.
- Provide trash and recycling receptacles to keep the transit area clean and minimize litter on transit vehicles.
- g. Bolt down receptacles to avoid removal. If possible, avoid placing bins in direct sunlight to minimize foul smells.

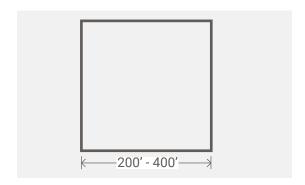
6. Street Furniture and other Fixed Objects



- The location of fixed objects, such as utility poles, light fixtures, and other street furniture should not impinge on or restrict the adjacent walkway.
- Walkways must be clear of fixed objects in coordination with ADA accessibility guidelines.
- The zone must comply with ADA requirements and provide a four foot minimum width for wheelchairs to move unobstructed.
- d. Install pedestrian-scale lighting, typically including lamps less than 25 feet high, to increases comfort and safety along sidewalk areas where pedestrians will be present.
- e. Install bike parking within the sidewalk areas adjacent to schools, retail and other non-residential uses.

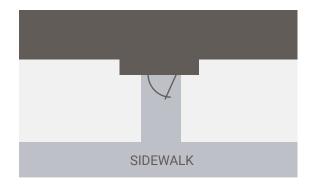
II. PROJECT DEVELOPMENT

1. Block Size



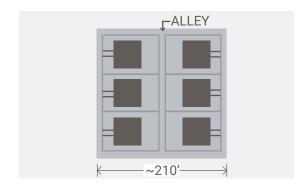
- a. New block lengths shall be 200 to 400 feet and shall not exceed 600 feet except where connections cannot be made because of physical obstacles, such as prior platting of property, construction of existing buildings or other barriers, wetlands and water bodies, railroad and utility rights-of-way, existing limited-access motor vehicle rights-of-way, and parks and dedicated open space.
- b. All new streets shall intersect to create a connected mobility network.
- c. Any part of the public right-of-way shall be available for general public use and shall not be gated.

2. Building Orientation



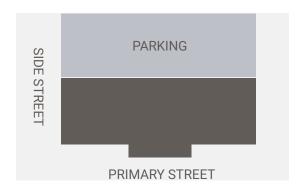
- 90 percent of new buildings shall have a functional entry onto the street or other public space, such as a park or plaza, but not a parking lot.
- The functional entry must be connected to a sidewalk or equivalent provision for walking.

3. Density



- All new residential sub-divisions shall have a density no less than six, nine or 12 dwelling units per acre of buildable land available
- Any nonresidential components of a project shall be built at a density of 0.50 or higher FAR for the buildable land available.
- c. Locate or design the project so that a publicly accessible outdoor recreation facility at least one acre in area, or a publicly accessible indoor recreational facility of at least 25,000 square feet, lies within a one-half mile walking distance of 90 percent of new and existing dwelling units and nonresidential use entrances.
- d. Outdoor recreation facilities must consist of physical improvements and may include children's play areas, swimming pools, and sports fields, such as baseball diamonds.

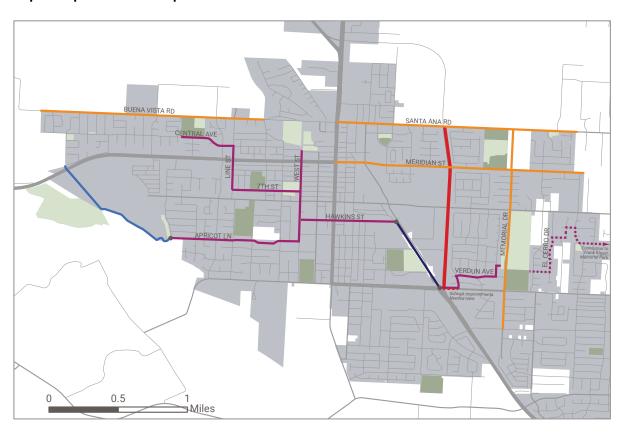
4. On-Site Parking



- All on-site parking, with the exception of single family homes, shall be placed where it is not coterminous with the primary street
- b. To the extent possible, new single family homes shall be designed with driveway access off of a local side street or preferably off of an alleyway and not coterminous with a primary street.

Goal 3: Network of Public, Green Spaces

Map 12: Map of Public Green Space Network





Green open spaces have multiple social, health, and environmental benefits. Residents from Hollister have a desire for additional green spaces as well as having a safer way to get to them. Complete Streets help residents access open spaces while improving transportation infrastructure. According to the National Association of City Transportation Officials (NACTO), green streets are vital public spaces that provide better air quality, shade, and beautification and access to nature where green space might be limited.1 Public open spaces also fulfill leisure, recreation, quality of life, and meet social needs of the community members. Existing green spaces in Hollister can be connected through a continuous system linking residents to local green spaces as well as creating a network of green streets via implementing green infrastructure.

Green infrastructure can help manage stormwater and address the urban heat island effect as well. For example, green infrastructure provides ecological and aesthetic enhancements while implementing traffic speed and volume control measures.² As a result, this helps reduce vehicle speed and volume and reduces street crossing distance for pedestrians and cyclists. The experience of pedestrians and bicyclists is enhanced by providing a pleasing environment to walk, bike, and sit. In addition, street trees can maximize shade and encourage walking and biking. Green infrastructure can also address sustainability by installing stormwater-capturing designs that improve water quality and manage stormwater flows. Integrating parks and green infrastructure by providing access to parks is crucial a resident's wellbeing.

The network map provided here offers a conceptual look at how a series of streets may be prioritized for green infrastructure improvements in the future. Many of these improvements will require the City to retrofit portions of existing rights-of-way whereas others can be implemented as new developments are constructed. The area represented by the dashed purple line on the map (identified as TBD) in particular will require future consideration as there is no clear pathway today connecting the two memorial parks. Over time, the addition of green street improvements can encourage higher levels of recreation, provide shade and offer more habitat area, and infiltrate and retain stormwater. This initial network is purposefully modest in scope and largely takes advantage of existing, low volume streets that in many ways today already provide a comfortable walking and biking experience. These streets were also selected for the connections they provide between existing parks. In this way the streets help extend the park outwards into the community and encourage visitors to walk or bike to the park. A recreational outing could also include a walk or bike ride between parks.

To encourage initial utilization of this new network the maps below illustrate a series of six potential pop-up or ciclavia style events that could include temporary improvements, using such elements as traffic cones, sign boards and other moveable elements to further "open" the street for bikes and pedestrians while simultaneously slowing car speeds in these areas. The six pop-ups range in length from one to almost four miles and thus provide a range of lengths suited to diverse interests and capabilities.

¹ https://nacto.org/publication/urban-street-stormwater-guide/ streets-are-ecosystems/green-street-principles/

² https://nacto.org/publication/urban-bikeway-design-guide/bicycle-boulevards/green-infrastructure/

Figure 22: Apricot Lane to Vista Hill Park

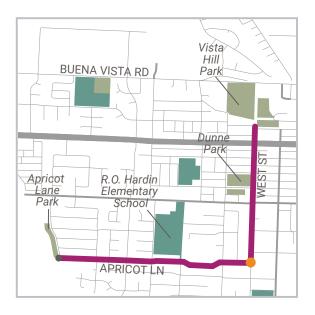


Figure 24: Vista Hill Extension



Figure 23: Apricot Lane to Rancho San Justo Park

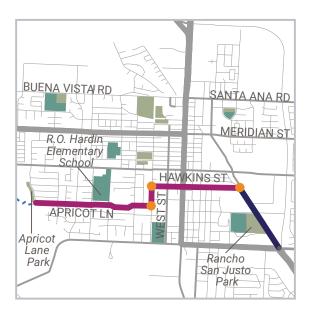


Figure 25: Vista Hill to Memorial Park





Figure 26: Calaveras School Park to Ranch San Justo Park

Figure 27: Southeast Local Pop-Up



Additional resources could be pursued, over time, that would introduce elements such as street trees, bulb-outs, and chicanes to both slow travel speeds, while also increasing opportunity to capture and slow stormwater and providing additional nesting and feeding habitat for native species. These improvements would further strengthen the identity of the "green streets" as part of a public space network. Illustrative examples of these types of improvements are included at the end of this section.

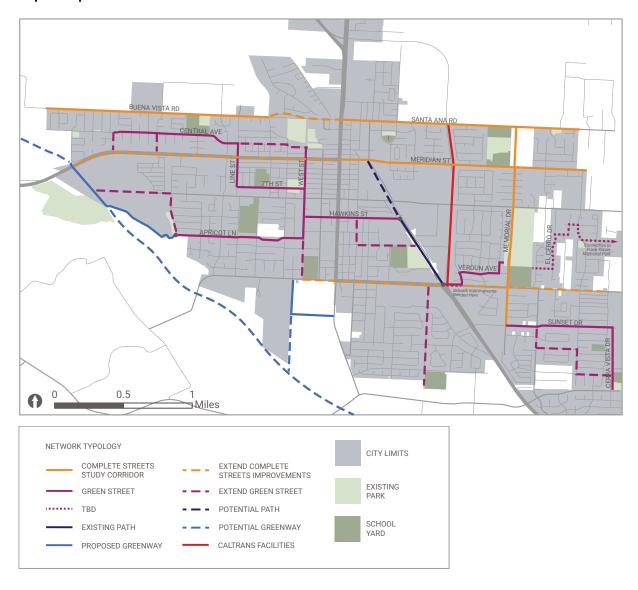
The map also highlights a couple of areas where additional intervention would be needed. For example, in order to connect the multi-purpose path on Prospect with the neighborhood streets immediately east of Highway 25 requires crossing the highway along Tres Pinos Road and Sunnyslope. The extent of vehicle movements and auto centric infrastructure in this area will require additional design elements to improve the overall safety and comfort of walking or biking along this stretch of roadway. East of Memorial Park it is suggested that, over time, pathways and streets be combined to provide a seamless connection between Veterans Memorial Park, Las Brisas Park and Frank Klauer Memorial Park. This will require require future developments to connect to the neighboring street system instead of perpetuating a series of landlocked, communities that terminate in cul-de-sacs. This existing development pattern only serves to exacerbate traffic patterns as it forces all users out to the large, fast moving arterials and therefore dissuades someone from walking and/or bicycling.



This path that connects Marne Drive to the nearby park provides a safe and convenient place to walk.



Existing



Map 13: Map of Potential Network

Over time the initial network can be expanded to continue to link existing and new park spaces so that ultimately there is an uninterrupted flow of comfortable biking and walking streets and/or pathways uniting the various parks and schools. An example of an expanded network is provided as guidance here.

The existing pathway that links Marne Drive to the small park on the westside of Memorial Drive is an example of the type of connective

pathway that might be inserted into either a new or existing community. This short, but very effective path, provides an opportunity for residents to walk or bike to a neighboring park without going out to a busy street. The rendering here offers a suggestion as to how such a pathway could be improved to provide an even more inviting experience.

The following two pages offer some illustrative examples of the types of improvements that could be included on these streets over time.

Figure 28: Example of Tree and Parkway Plantings

F MASTER METRIC METRICAL STREET

Figure 29: Example of Chicanes

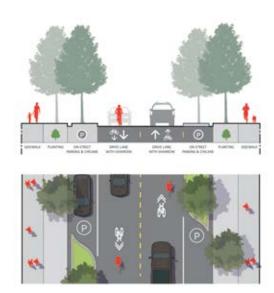


Figure 30: Example of Mid-Block Curb Extension

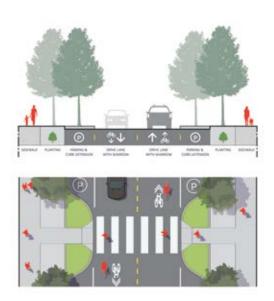


Figure 31: Example of Curb Extension

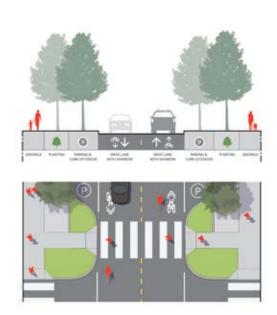
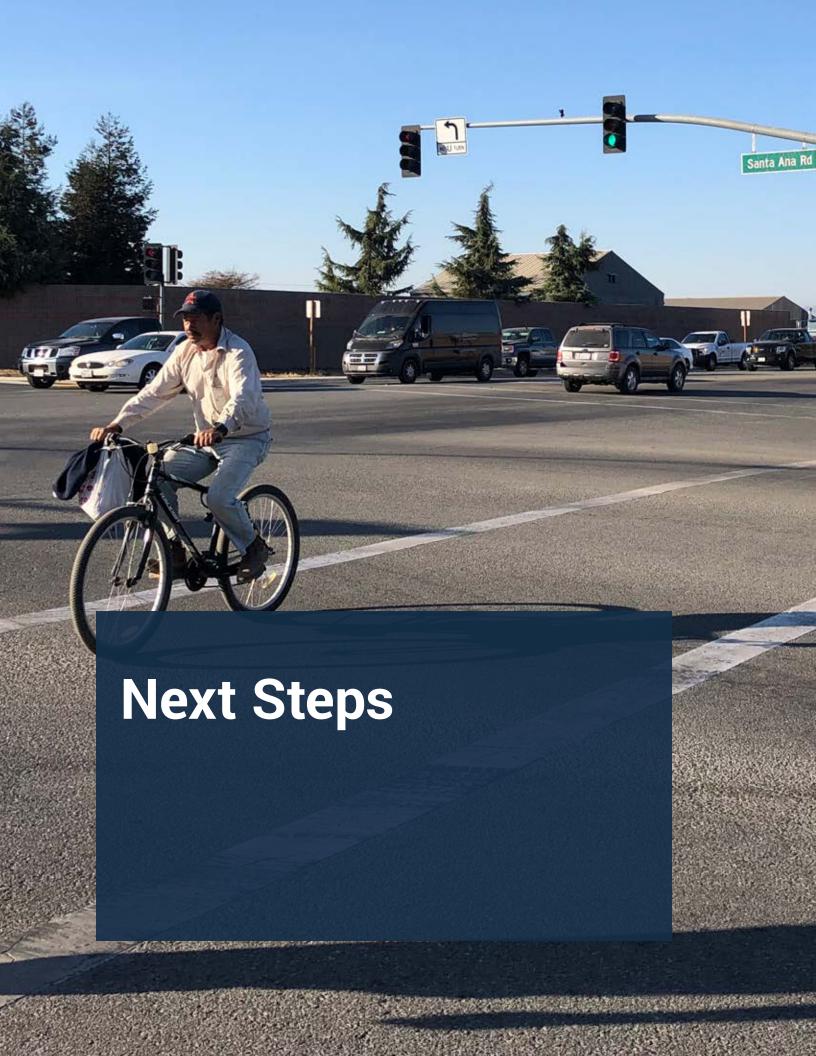




Figure 32: Example of a Mini-roundabout



Next Steps

With the completion of this Plan the City of Hollister is eager to translate the Plan's strategies into future actions that contribute to the City's vision for safe, comfortable and inviting streets, compact and walkable neighborhoods and a network of public, green spaces. To facilitate this next phase strategies are differentiated into near-term and mid/ long term priorities. The near-term priorities are efforts that could reasonably be completed within a one to five-year timeframe whereas the mid/long-term priorities will likely take place within the next five to ten or more years. A list of potential funding sources to assist with the implementation are outlined at the end of this section.

NEAR-TERM IMPROVEMENTS

The recommended near-term priorities include changes to the City's General Plan and Zoning Code as well as Capital Improvements within the roadways:

PLANNING ACTIVITIES

- » Incorporate the Plan's goals and strategies into the 2040 General Plan update
- » Update the City's zoning ordinance to include the Plan's goals, strategies and design treatments
 - » Implement Plan goals, strategies and design treatments through future development projects.

CAPITAL IMPROVEMENTS

- » Encourage new development projects to implement complete streets strategies
- » Apply for grant funding to implement the short-term street concept plans that are detailed under Goal 1 and illustrated in detail in Appendix A: Attachment D.
 - » Potential City funding source: Capital Improvement Program/Annual Road Improvement monies
- » Host one or more "open street" pop-up event annually. See pages 59 and 60 for suggested street segments.
 - » Potential grant source: Safe Routes to School Program

Decisions about which streets and/or which improvements to include in a grant proposal will require a strategic decision-making process that considers such topics as: current development activities, adjacent land uses, user demand, ease of construction and particular funding objectives.

COMPLETE STREETS

Near-term opportunities for each of the four complete streets focus primarily on relatively low-cost improvements that can be implemented within the roadway area and that don't require changes to the curb and/or drainage system. These near-term improvements can help build support for the additional investments and more infrastructure intensive improvements proposed in the long-term. The striping plans laid out in Appendix A: Attachment D provide preliminary design guidance that will need to be further analyzed for location-specific considerations at the time that implementation and/or funding is sought in order to confirm feasibility.

Most of the proposed near-term improvements rely on striping and other painted elements within the roadway that, while low-cost, can have a big impact on roadway safety and encourage more pedestrian and bicycle activity. Such improvements include:

- » Re-striping from four travel lanes to two lanes of travel with a center turn lane
- » Striping for a buffered bicycle lane
- » Parking lane striping
- » Continental crosswalks

The exception for this is the bulb-out median refuge areas that are accompanied with the Rectangular Rapid Flashing Beacon (RRFB) system. This upgrade proposed for both Meridian Street and Memorial Drive could arguably be considered a mid-term improvement due to its additional cost.

NETWORK OF PUBLIC, GREEN SPACES

Similarly, the open-street pop-up improvements suggested to kick start awareness of, and support for, the Network of Public, Green Spaces include temporary, low cost improvements. The addition of traffic cones, sign boards and other moveable elements can easily be introduced into the roadway area for a few hours and yet offer users the opportunity to physically experience the potential for future changes. The decision to determine which of the six pop-up events is implemented first will need to consider potential users, nearby activities and/ or events, as well as community and political interest.

MID/LONG-TERM IMPROVEMENTS

Similar to the strategies included in the nearterm improvements the mid/long-term improvements can be allocated into planning and capital improvement categories:

PLANNING ACTIVITIES

- » Incorporate Network of Public Green Spaces into Parks Facilities Master Plan
 - » Conduct a feasibility study to explore potential for inclusion of complete street public green space into the City's Park/Open Space Impact Fee
- » Prepare a New Bicycle and Pedestrian Master Plan Network in collaboration with San Benito County and the Council of San Benito County Governments (SBCOG)

CAPITAL IMPROVEMENTS

- » Apply for grant funding to design and implement suggested long-term right-of-way improvements
 - » Potential City funding source: Capital Improvement Program/Annual Road Improvement monies
- Identify segments of the Network of Public Green Spaces for specific project implementation
 - » Potential grant sources: California Natural Resources Agency Green Infrastructure Grants, California State Water Resources Control Board Storm Water Grant Program
- » Undertake a Sidewalk Gap Closure Program

The decision of which segments to apply for funding will, similar to the short-term improvements, rely on strategic decision making that further takes into consideration previously scheduled capital improvements as well as political and community support. Aligning the City's repaving schedule with potential complete street and/or green network improvements can offer the opportunity to streamline construction and reduce material and labor costs.

COMPLETE STREET IMPROVEMENTS

The long-term improvements described in the Goal One section are not independent of the short-term improvements but instead complement, and build upon the original striping and other roadway pavement markings. The short-term improvements, arguably, will have taken on some of the initial political lift by shifting

the allocation of the roadway space from one focused almost exclusively on vehicular needs to one that carved out dedicated area for bicycling. With users increased familiarity for, and support for this altered roadway alignment additional funding can be pursued that adds physical elements that further alert drivers to the presence of pedestrians and bicyclists while offering increased physical protections for pedestrians and bicyclists. In order to move forward with these mid/long-term investment strategies complete detailed analysis and/ or feasibility analysis will be needed. Striping plans, similar to what have previously been completed for the short-term strategies, will need to be completed for each complete street segment. Such plans should incorporate transitions at intersections.

The capital investments envisioned include:

- » Landscape Buffered bicycle lanes
- » Raised speed tables/ crosswalks

NETWORK OF PUBLIC, GREEN SPACES

The mid and longer-term improvements that are proposed to implement the Network of Public, Green Spaces can build upon the success of short-term, pop-up events. While the pop-up events hopefully encouraged families, children and seniors to bike and walk on their nearby local streets for the duration of the event the addition of such features as street trees, bubouts and chicanes can provide for a street environment that regularly encourages pedestrians and bicyclists due to the increased levels of shade and reduced vehicular speeds.

COORDINATION

Close coordination with City departments as well as other local agencies including San Benito County, transit operators, and Caltrans are crucial steps during the planning, design and implementation phases. The intersections with State Highway 25 are locations where collaboration with Caltrans will be particularly important to ensure that the envisioned complete street improvements can be designed and implemented in a way that ensure that they meet both the City's and Caltrans' goals.

CONSTRUCTION MANAGEMENT

Street improvements can be disruptive to nearby residents and businesses and it will be important for the City to work with residents and businesses to identify strategies that can minimize disruptions to daily lives and activities. Strategies might include:

- » Scheduling the work to occur in as short a time frame as possible to minimize the length of inconvenience.
- » Developing a communication schedule that includes regular updates via new media, community meetings, email and/or the City's website to keep everyone informed regarding the timeline and anticipated construction activities.
- » Maintaining pedestrian and bicycle access during construction.

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Funding Sources

To assist with the implementation of a number of the complete and green street improvements that have been previously identified in this document there are number of funding strategies and sources that the City may consider may pursuing. While the first two strategies require local regulatory or voter-approved action, the remainder represent a current list of state grant programs that the City could apply for.

DEVELOPER IMPACT FEES

As a condition for development approval, municipalities can require developers to provide certain infrastructure improvements, which can include bicycle and pedestrian projects. These projects have commonly provided Class II facilities for portions of on-street, previously planned routes and public spaces. They can also be used to provide bicycle parking or shower and locker facilities. The type of facility that should be required to be built by developers should reflect the greatest need for the particular project and its local area.

LOCAL BOND MEASURES

Local bond measures, or levies, are usually initiated by voter-approved general obligation bonds for specific projects. Bond measures are typically limited by time, based on the debt load of the local government or the project under focus. Funding from bond measures can be used for right-of-way acquisition, engineering, design, and construction of pedestrian and bicycle facilities. Bond measures are often used by cities for local match in grant applications. Transportation-specific bond measures featuring a significant bicycle/ pedestrian facility element have passed in other communities, such as Seattle's.

State Funding Sources

CALTRANS FUNDING PROGRAMS

Caltrans operates a number of different competitive grant programs focused on improvements for active transportation. For additional information on these and all Caltrans funding programs visit: https://dot.ca.gov/programs.

- 1. Active Transportation Program
- 2. Sustainable Transportation Planning Grants
- 3. Community Based Transportation Planning Grant Program
- 4. Highway Safety Improvement Program
- 5. Regional Surface Transportation Program

CALTRANS' ACTIVE TRANSPORTATION PROGRAM

The California State Legislature created the Active Transportation Program to encourage active modes of transportation. Senate Bill 1 (SB 1) stipulates that \$100,000,000 of revenues from the Road Maintenance and Rehabilitation Account will be available annually to the ATP. The ATP consolidates existing federal and state transportation programs, including the Transportation Alternatives Program (TAP), Bicycle Transportation Account (BTA), and State Safe Routes to School (SR2S), into a single program with a focus to make California a national leader in active transportation. Applications are to be submitted typically in July.

CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM (CMAQ)

CMAQ provides funding to state and local agencies for transportation projects that help meet Clean Air Act objectives. Funded projects must work to reduce congestion and improve area quality in nonattainment or maintenance zones for ozone, carbon monoxide or particulate matter. CMAQ funds can be used for bicycle and pedestrian projects that are included in the metropolitan planning organization (MPO) current transportation plan and transportation improvement program (TIP). Projects can include bicycle and pedestrian facilities that are not exclusively recreational and for outreach related to safe bicycle use. Studies that are part of the project development pipeline (e.g., preliminary engineering) are also eligible for funding.

CALIFORNIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT AFFORDABLE HOUSING AND SUSTAINABLE COMMUNITIES PROGRAM

The purpose of the Affordable Housing and Sustainable Communities (AHSC) Program is to reduce greenhouse gas (GHG) emissions through projects that implement land-use, housing, transportation, and agricultural land preservation practices to support infill and compact development, and that support related and coordinated public policy objectives. More information: www.hcd.ca.gov/grants-funding/ahsc.shtml

CA NATURAL RESOURCES AGENCY URBAN GREENING

The Urban Greening Program is responsible for reporting to the California Air Resources Board (CARB) GHG emission reductions resulting from funded projects in accordance with the CARB approved quantification methodology and the Funding Guidelines for Agencies that administer California Climate Investments (2018). All projects are required to show a net GHG benefit and provide multiple other benefits. In order to quantify GHG emission reductions, projects must include at least one of the following project activities:

- » Sequester and store carbon by planting trees
- » Reduce building energy use by strategically planting trees to shade buildings
- » Reduce commute vehicle miles traveled by constructing bicycle paths, bicycle lanes or pedestrian facilities that provide safe routes for travel between residences, workplaces, commercial centers, and schools.

Urban Greening Round 3: \$19.0M available for projects that sequester carbon and/or reduce vehicle miles traveled (e.g., commuter paths, tree plantings, parks). Competitive to city, county, special district, nonprofit, & JPA entities. http://resources.ca.gov/grants/urban-greening/



Illustrative example of potential improvement to the Path at Marne Drive

CA NATURAL RESOURCES AGENCY GREEN INFRASTRUCTURE GRANTS

Green Infrastructure (GI) Grant Program is the intent of the people of California that projects funded by Proposition 68, including the GI Grant Program, result in public benefits addressing the most critical statewide needs and priorities for public funding.

Urban Green Infrastructure - \$18.5M available for green infrastructure projects (e.g., green streets, tree planting, parks, commuter trails, etc.). Competitive to local, nonprofit, nongovernmental land conservation entities. http://resources.ca.gov/grants/green-infrastructure/

CA STATE WATER RESOURCES CONTROL BOARD STORM WATER GRANT PROGRAM (SWGP)

Prop 1 authorized \$7.545 billion in general obligation bonds for water projects including surface and groundwater storage, ecosystem and watershed protection and restoration, and drinking water protection. The State Water Board will administer Prop 1 funds for five programs. Of the \$7.545 billion, Prop 1 (Section 79747) provides \$200 million in grant funds for multi-benefit storm water management projects.

Implementation grants will only be awarded to projects that are included and implemented in an adopted Integrated Resource Water Management Plan 2 (IRWMP2), are included in a Storm Water Resource Plan, respond to climate change, contribute to regional water security, and contain a minimum of two benefits as listed in Section III.G. – Storm Water Management Benefits.

Specific types of eligible projects include:

- » Green Infrastructure
- » Rainwater and storm water capture
- » Storm water treatment facilities
- » Demonstration or pilot projects that are consistent with the eligibility requirements of Prop 1

IMPROVEMENT	PHASIN	IG		
	Near Term	Mid Term	Long Term	
PLANNING RELATED ACTIVITIES				
Incorporate the Plan's goals and strategies into the 2040 General Plan update	x			
Update the City's zoning ordinance to include the Plan's goals, strategies and design treatments	x			
Incorporate the Network of Public Green Spaces into Parks Facilities Master Plan		x		
Conduct a feasibility study to explore potential for inclusion of complete street public green spaces into the City's Park/Open Spaces Impact Fee		x	x	
Prepare a New Bicycle and Pedestrian Master Plan Network		x		
COMPLETE STREET IMPROVEMENTS				
Re-striping of four lane roadway to two lanes with a center turn lane	x			
Buffered Bicycle Lane - painted	x			
Continental Crosswalks	x			
Parking Lane Striping	x			

FUNDING RESOURCES									
Caltrans' Active Transportation Program (TAP, BTA and Safe Routes to School Programs)	Sustainable Transportation Planning Grants	Community Based Transportation Planning Grant Program	Highway Safety Improvement Program	Regional Surface Transportation Program	Congestion Mitigation and Air Quality Improvement program	Urban Greening round 3	CA Natural Resources Agency Green Infrastructure Grants	CA State Water Resources Control Board Stormwater Grant Program	City's Capital Improvement Program/Annual Road Improvement Monies
X		X							
x x	x x		x x	x x		x x	x x	x x	x x
x	х		x x	x		x	x	x x	x x

Continued on next page

IMPROVEMENT	PHASIN	PHASING			
	erm	ELL	lerm		
	Near Term	Mid Term	Long Term		
COMPLETE STREET IMPROVEMENTS (CONT.)					
Rectangular Rapid Flashing Beacon System		x			
Street Trees	x	x			
Detailed Analysis, Feasibility Study		x			
Full Corridor Plan Drawings for Long-Term Improvements		x			
Protected Bicycle Lane w/Landscaped Buffer			x		
Raised Speed Table/Crosswalk			x		
NETWORK OF PUBLIC GREEN SPACES					
Pop-Up Events- install traffic cones, other moveable, temporary materials		x			
Identify segments of the Network for specific project implementation (street trees, bulb-outs, chicanes)		x	x		
Sidewalk Gap Closure Program		x			

FUNDING RESOURCES									
Caltrans' Active Transportation Program (TAP, BTA and Safe Routes to School Programs)	Sustainable Transportation Planning Grants	Community Based Transportation Planning Grant Program	Highway Safety Improvement Program	Regional Surface Transportation Program	Congestion Mitigation and Air Quality Improvement program	Urban Greening round 3	CA Natural Resources Agency Green Infrastructure Grants	CA State Water Resources Control Board Stormwater Grant Program	City's Capital Improvement Program/Annual Road Improvement Monies
x	x		x	x		x	x	x	
x	x		x	x		x	x	x	x
х		х							x
х		х							
х			x	x		x	х	x	
x			x	x		x	x	x	
х						x	х	x	х
х									х



Introduction

Complete Streets are designed and operated to enable safe access of the transportation network by all users, including pedestrians, bicyclists, motorists, and transit riders regardless of age and abilities. The purpose of this study was to evaluate existing infrastructure and traffic conditions along four corridors in the City of Hollister - Buena Vista Road, Santa Ana Road, Meridian Street, and Memorial Drive and develop recommendations to enhance access and safety for all users of the roadway. A multi-modal operational analysis was conducted to a) identify missing pedestrian and bicycle facilities, b) assess the vehicle operations of the corridors for the purposes of determining if excess pavement and capacity can be repurposed for other modes of transportation, and c) develop a short-term restriping plan to enhance accommodations for pedestrians and bicyclists while continuing to provide adequate facilities for vehicle circulation.

Study Area

The study area consists of the following four corridors:

Buena Vista Road (from the West City Limit/ Beresini Lane to Locust Avenue): This section of Buena Vista Road is 1.2 miles in length with one vehicle travel lane in each direction and an eastbound Class II bike lane. Pedestrian access is provided by sidewalks on the south side of the arterial. Land uses along the northern side of the roadway are primarily agricultural and no sidewalks are provided. Intersections along the corridor are unsignalized, with stop controls on the side street approaches, except for the intersection with Locust Avenue, which is controlled by all-way stops. Calaveras Elementary School is located in the middle of the corridor, west of Westside Boulevard. There are no pedestrian crosswalks across Buena Vista Road other than the yellow school crosswalks at the uncontrolled intersection with Line Street. It should be noted that in the future the City plans to extend Buena Vista Road further east to connect with North Street.

Santa Ana Road (San Benito Street to the Eastern City Limits): Santa Ana Road is an east-west arterial with varying widths for this 1.0-mile section. Gabilan Hills Elementary School/Hollister Dual Language Academy, the primary destination for pedestrians and bicyclists along the corridor, is near the east end of the study segment. The corridor is primarily a two-lane roadway with a three-lane section east of State Route (SR) 25. On-street parking and sidewalks are provided on both sides of the street west of the Chappell Road intersection; to the east, the northern side of the road is

agricultural with no sidewalks or on-street parking. The intersections with San Benito Road, Rustic Street-McCray Street and SR 25 are controlled by traffic signals, while the Chappell Road intersection is controlled by all-way stops; all other intersections along the segment have stop controls only on the side street approaches. There are no bike lanes on the corridor. Santa Ana Road will connect to Buena Vista Road once the future extension of North Street is constructed.

Meridian Street (from San Benito Street to Clearview Drive): The segment is 1.42 miles in length and is a five-lane arterial without bike lanes within a 60-foot pavement section east of McCray Street. To the west of McCray Street, the corridor has three lanes with parking on both sides and no bike lanes. The corridor is primarily residential; there are also commercial uses at the western end of the corridor and Marguerite Maze Middle School west of the intersection with Memorial Drive. Sidewalks are generally present along the corridor except an unimproved section along the southern frontage, west of SR 25. The intersections with San Benito Road, McCray Street, Chappell Road, and SR 25 are controlled by traffic signals, and the East Street and Memorial Drive intersections have all-way stop controls; all other intersections are stop-controlled only along the side street approaches.

Memorial Drive (from Sunset Drive to Meridian

Street): The study corridor is 1.20 miles in length and is a four-lane arterial with no bike lanes within 60 feet of pavement. The corridor is primarily residential, except for the section between Sunnyslope Road and Hillcrest Road, which includes Veterans Memorial Park, Sunnyslope Medical Center, and Sunnyslope Elementary School. The intersections with Meridian Street, Hillcrest Road, and Sunset Drive are controlled by all-way stop controls while the intersection with Sunnyslope Road is controlled by a traffic signal. The corridor includes 5- to 10-foot sidewalks on both sides of the street. There are currently no marked crosswalks along a 3,000-foot segment between Sunnyslope Road and Hillcrest Drive, which is along the park frontage. Memorial Drive is planned to be extended in the future between Meridian Street and Santa Ana Road.

Analyzing Potential Improvements

The study corridors were evaluated by comparing several scenarios that consider current and future traffic volumes, the configuration of the roadways and intersections, and the estimated traffic delay at each study intersection. The delay during the a.m. peak hour (highest volume hour between 7 and 9 a.m.) and the p.m. peak hour (between 4 and 6 p.m.) which represent the peak commute periods was measured for the following scenarios:

- » Existing roadway configuration, delay calculated based on traffic volumes collected in 2018
- » Potential modifications to each roadway, assuming 2018 traffic volumes
- » Existing roadway configuration, delay calculated based on estimated 2040 traffic volumes
- » Potential modifications to the roadway, assuming estimated 2040 traffic volumes
- » Assumptions Underlying Traffic Volume Estimates

The 2018 traffic volumes were based on previously collected data as well as calculated estimates. Data was collected in the field for several study intersections in 2018 for the Woodle Pre-Zone and Annexation Traffic Impact Analysis (2019) and the Rosati Annexation Project Traffic Impact Analysis (2019). For study intersections that were not included in either of these reports, the City of Hollister provided traffic volumes collected between 2014 and 2016. These older volumes were adjusted upward using a growth factor of 2.5 percent per year to make them more comparable to the 2018 volumes.

The estimate of traffic volumes for 2040 assumes the realization of planned development and land use changes as well as the completion of two roadway projects - the connection of Buena Vista Road to Santa Ana Road via North Road, and the extension of Memorial Drive from its current terminus at Meridian Street to Santa Ana Road. These assumptions are consistent with those in the two traffic impact analyses (TIAs) cited above. For intersections evaluated in these studies, the 2040 volumes were taken from the "Cumulative Plus Project" traffic scenarios. For the remaining study intersections, 2040 volumes were estimated by adjusting the 2018 volumes using an annual growth factor; this growth factor was based on 2015 and 2040 volumes generated by the Association of Monterey Bay Area Governments (AMBAG) travel demand model.

Intersection Operational Analysis

Intersection operations were analyzed at the following 16 intersections to estimate delay:

- » Buena Vista Road at Miller Road, Westside Boulevard, and Locust Avenue
- » Santa Ana Road at San Benito Road, Rustic Street-McCray Street, Chappell Road, SR 25, and Memorial Drive (future extension)
- » Meridian Street at San Benito Street, McCray Street, SR 25, Memorial Drive, and El Toro Drive
- » Memorial Drive at Hillcrest Road, Sunnyslope Road, and Sunset Drive (in addition to Santa Ana Road and Meridian Street as listed above)

Ten of the 16 study intersections operate at acceptable levels of delay (LOS C or better) under both existing and future conditions. The other six intersections do not meet City standards under either existing conditions, future conditions, or both. LOS calculations are attached.

TRAFFIC SIGNAL WARRANT ANALYSES

Based on the current and future traffic volumes, the intersections of Buena Vista Road/Westside Boulevard and Memorial Drive/Hillcrest Road were identified as candidates for traffic signals or roundabouts, and a warrant analysis was conducted using the Peak Hour warrant from the California Manual on Uniform Traffic Control Devices. Neither traffic signals or roundabouts were warranted at Buena Vista Road/Westside Boulevard under current or future conditions. The Memorial Drive/Hillcrest Road intersection did not meet the signal warrant under existing conditions but did meet the signal warrant under future conditions based on projected volumes for the a.m. and p.m. peak hours.

The warrant analysis worksheets, which provide additional details, are attached.

Collision Analysis

The collision history for the study area was evaluated for the period of January 1, 2015 through December 31, 2019. Collision and injury rates for each study segment and intersection were compared to the statewide averages for similar facilities. While many of the study intersections were found to have high collision/injury rates, the actual number of collisions was low. As a result, even a small reduction in the number of collisions would bring the rate more in line with the statewide average. The collision analysis returned the following findings:

- » Santa Ana Road/Rustic Street-McCray Street: Half of the reported collisions were with parked vehicles, including one in the intersection. Prohibiting parking around the intersection could be considered, given the offset configuration.
- » Santa Ana Road/SR 25: Six of the 13 reported collisions were the result of drivers running red lights or right-of-way violations, including five caused by westbound drivers. Two of the collisions involved left-turning westbound vehicles colliding with an eastbound vehicle. Consideration could be given to use of a flashing yellow arrow or Left Turn Yield on Green (R10-12) sign to remind drivers of the right-of-way assignment.

- » Meridian Street/SR 25: This intersection showed a similar pattern to the Santa Ana Road/SR 25 intersection, with eight of 13 collisions involving running of red lights or right-of-way violations, though the directionality was more varied.
- » Memorial Drive/Hillcrest Road: Collisions at this intersection involved running stop signs/right-of-way violations, and speeding. Consideration could be given to oversized stop signs or signs with blinking lights; median stop signs could also be considered if a median is installed at this location.

Collision rate calculation worksheets are attached.

Potential Alternatives

Alternatives were developed for each of the study corridors based on the needs for multimodal accommodations, evaluation of existing traffic conditions, and assessment of the potential impacts of potential modifications on future traffic operations. Concepts underlying the alternatives include reduction in the number of travel lanes, modifications of intersection lane configurations, and implementation of new pedestrian and bicycle facilities, as described below.

ROAD DIETS

A "road diet" involves redesigning the geometrics of the roadway to reduce the number of travel lanes and repurpose the space for other transportation modes such as walking, bicycling, and transit. This might include the use of features such as bike lanes and pedestrian refuge islands. Most commonly, road diets consist of converting an undivided four-lane street to a three-lane street including a two-way left turn lane and bike lanes.

While the specific elements of road diets vary from project to project, the benefits of road diets include the following:

- » Reduce rear-end and left-turn crashes due to the addition of a dedicated left-turn lane; studies have found an overall crash reduction of 19 to 47 percent for four-lane to three-lane conversion projects.
- Reduce right-angle crashes as side street motorists cross three versus four travel lanes (see Plate 1) and can make two-stage left turns using the center turn lane.
- » Shorten distance for pedestrians to cross vehicle lanes.
- » Improve sight lines at left turn and pedestrian crossing locations (see Plate 2).
- » Use newly available space to install pedestrian refuge islands, bicycle lanes, on-street parking, or transit stops. The availability of these facilities can help increase use of these transportation modes.
- » Maintain more consistent vehicle speeds by reducing stop-and-go operations resulting from turning vehicles.

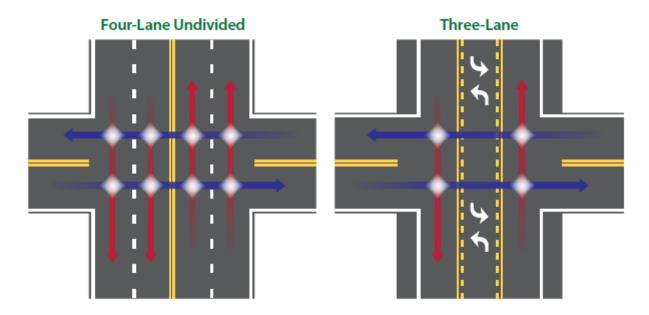


Plate 1: Reduced number of crossing and through traffic conflict points due to road diet

Source: Road Diet Informational Guide, Federal Highway Administration, 2014

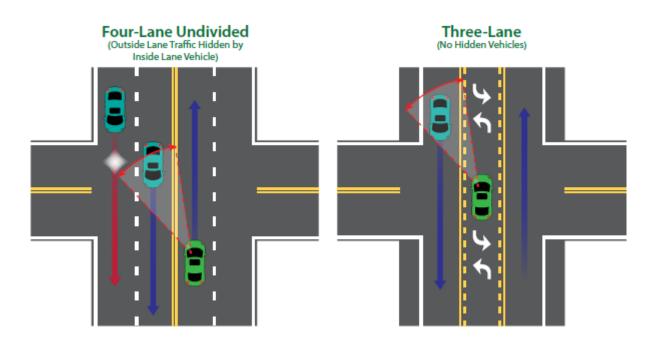


Plate 2: Lane reduction avoids problem of vehicles in outside lane being blocked by inside lane vehicle

Source: Road Diet Informational Guide, Federal Highway Administration, 2014

COMPLETE STREETS DESIGN ELEMENTS

There are numerous design elements that can be used to develop complete streets, including as part of road diets. The following treatments were considered for deployment at locations throughout the corridor:

Buffered Bike Lanes: The addition of a striped buffer area between bike lanes and vehicle lanes provides separation that increases the comfort of bicyclists that might otherwise be reluctant to ride in proximity to traffic. Buffered bike lanes are often used along arterial streets with high traffic volumes and high-speed traffic.

Median refuge island: Refuge islands improve crossings for pedestrians by enabling them to cross one direction of traffic at a time, providing a place to wait for a gap before completing the crossing. Refuge islands also visually narrow the roadway, encouraging slower vehicle speeds.

Rectangular Rapid Flashing Beacons (RRFB):

These pedestrian-activated devices have been found to increase rates at which motorists yield to pedestrians at uncontrolled crosswalks. Since RRFBs serve to increase the visibility of pedestrians to motorists to encourage yielding, they do not impact traffic flow.

Curb extensions: Curb extensions at cross-walks narrow the roadway, shortening the crossing distance for pedestrians. They also enable drivers to more easily see pedestrians, who are able to step further towards the vehicle path before stepping off the curb.

Crosswalk striping: Existing crosswalks in the study area consist of two parallel stripes perpendicular to traffic. Continental or ladder-style crosswalk striping is recommended for all new crosswalks and school crosswalks in the study area as it is more visible to drivers.

PROPOSED ROAD DIETS AND GEOMETRIC CHANGES

Potential geometric changes were identified and evaluated for each of the study corridors. At the corridor level, this included road diets that would reduce Meridian Street from four and five lanes to three lanes and Memorial Drive from four lanes to three lanes. More targeted intersection treatments and roadway restriping were considered along Buena Vista Road and Santa Ana Road to provide space to accommodate bike lanes. The improvements recommended for the four study corridors are described below. Concept plans for each corridor are attached.

Improvements identified for each corridor were as follows:

BUENA VISTA ROAD

- » The entire segment could be restriped to add a westbound bike lane to the existing eastbound bike lane while maintaining the eastbound (south frontage) on-street parking.
- » East of the Buena Vista Road/Line Street intersection, the proposed cross-section is proposed to be restriped with three travel lanes and buffered bike lanes.
- » To provide for pedestrians on both sides of the street, the northern frontage will need to be improved. However, this may not be necessary until development occurs on the north side.
- » Once the northern area develops, enhanced pedestrian crossings should be provided. These crossings may include pedestrian activated flashing yellow beacons or RRFBs.
- » Existing and future traffic volumes would be supported by the existing two-lane section.

SANTA ANA ROAD

- » Bike lanes are proposed along the entire study segment. Between the bike lanes and vehicle lanes, a striped buffer two to three feet in width could be accommodated along most of the segment. On-street parking would be retained in the eastbound direction (south frontage).
- » The section between Chappell Road and Recht Street is 22 feet wide, which is too narrow to accommodate separated facilities for pedestrians and bicycles. Road improvements would be needed to serve these modes.
- » The access to the Dual Language Academy forces all exiting traffic to turn right onto Santa Ana Road. For greater flexibility, the access could be modified to enable traffic to exit the site in the westbound direction.
- » Existing and future traffic volumes can be accommodated by the existing two-lane section.

MERIDIAN STREET

- » Based on existing and future traffic volumes, only one through lane in each direction is required along the entire corridor.
- » Road diet striping is recommended to reduce the number of vehicle lanes from five to three, retaining one travel lane in each direction and the two-way left turn lane. This would provide sufficient space to stripe buffered bike lanes along the entire segment.
- » The proposed road diet east of McCray Street would enable provision of two six-foot bicycle lanes by repurposing the space currently occupied by a 12-foot wide vehicle lane.
- » The portion of the corridor near San Benito Street has one travel lane in each direction, so this intersection was assessed with the eastbound and westbound right-turn lanes removed to provide the cross-sectional width for bicycle lanes.
- » Pedestrian access would be enhanced by a new mid-block school crosswalk with an RRFB, curb extensions, and a median refuge island near the entrance to Marguerite Maze Middle School, west of the Memorial Drive intersection.

MEMORIAL DRIVE

- » Traffic volumes only warrant one through lane in each direction along the entire corridor.
- » A road diet is proposed along Memorial Drive. This would reduce the roadway from four lanes to three lanes and enable striping of buffered bike lanes along both sides of the street.
- » South of the Sunnyslope intersection, the road would be striped for only two travel lanes and the buffered bike lanes.
- » Pedestrian crossing enhancements are recommended at several locations. There is currently a 3,000-foot gap between marked crosswalks from Sunnyslope Road to Hillcrest Road, with no pedestrian crosswalks located along the Veterans Memorial Park frontage. To enhance pedestrian access to the park, three mid-block crosswalks are proposed near the locations of entrance gates to the park. Each crossing would include an RRFB, median refuge island, and a curb extension on the south side of the street.
- » Pedestrian crossings would also be enhanced by the introduction of all-way stop-controls at Cedar Drive and Juniper Drive, with crosswalks on all legs of both intersections, as well as a new yellow school crosswalk at the intersection of Verdun Avenue.
- » With a four- to three-lane road diet, the intersection of Memorial Drive/Hillcrest Road would require signalization or installation of a roundabout as the lane reduction would significantly impact vehicular operations at this location.

Proposed Road Diet Operational Impacts

In accordance with City policy, intersection operations were assessed to determine if the proposed geometric changes resulted in an unacceptable condition. Unacceptable conditions are defined as follows: a) if the intersection Level of Service (LOS) degraded from an LOS C or better to LOS D or worse and b) for intersections currently operating at LOS D or worse, if the proposed changes would result in an increase in delay of more than five seconds. Intersection operations were analyzed to determine the delay that would result from the reduction of travel lanes along these corridors, as summarized below. The Evaluation of Recommended Improvements is attached.

BUENA VISTA ROAD

PROPOSED MODIFICATION:

- » Buena Vista Road/Westside Boulevard: Remove eastbound right-turn lane.
 - » Impact: Northbound approach delay would increase by more than five seconds and degrade from LOS D to LOS E during the a.m. peak under future conditions.

SANTA ANA ROAD

PROPOSED MODIFICATIONS:

- » Santa Ana Road/SR 25: Remove the westbound right-turn lane.
 - » Impact: Acceptable increases in delay during the a.m. and p.m. peak are projected for existing and future conditions.
- » Santa Ana Road at the Memorial Drive extension: Remove the eastbound right-turn lane and add a westbound left-turn pocket.
 - » Impact: No increase in a.m. or p.m. peak hour delay anticipated under future conditions. (Note: This location was evaluated only for future conditions.)

MERIDIAN STREET

PROPOSED MODIFICATIONS:

- » Meridian Street/San Benito Street: Remove the westbound right-turn and eastbound leftturn lanes.
 - » Impact: Acceptable increase in delay under existing conditions. The intersection is expected to operate at LOS F in 2040. The proposed modifications would result in increases in delay of more than five seconds during the a.m. and p.m. peak hours under future conditions.

- » Meridian Street/McCray Street: Remove one through lane in each direction on Meridian Street.
 - » Impact: Acceptable increases in delay during the a.m. and p.m. peak hours under existing and future conditions.
- » Meridian Street/SR 25: Remove one through lane on Meridian Street in each direction, along with the eastbound right-turn lane and one of the northbound left-turn lanes.
 - » Impact: Increased delays would be acceptable under existing conditions. Under future conditions operation is expected to degrade from LOS C to an unacceptable LOS D during the a.m. and p.m. peak periods.
- » Meridian Street/Memorial Drive: Remove one through lane in each direction and add a northbound left-turn pocket (Meridian Street/ Memorial Drive was assessed as a tee intersection under existing conditions, and as a four-way intersection under future conditions with the extension of Memorial Drive to Santa Ana Road).
 - » Impact: Acceptable increases in delay during the a.m. and p.m. peak hours under existing and future conditions.
- » Meridian Street/El Toro Drive: Eliminate one eastbound and one westbound through lane, add left-turn lanes on Meridian Street.
 - » Impact: Acceptable increases in delay during the a.m. and p.m. peak hours under existing and future conditions.

MEMORIAL DRIVE

PROPOSED MODIFICATIONS:

- » Memorial Drive/Hillcrest Road: Remove one lane on each approach, add left-turn pockets.
 - » Impact: Intersection operation is expected to remain at LOS D, but delay would increase by six seconds during the p.m. peak hour under future conditions. During the a.m. peak hour, the intersection is expected to operate at LOS E, but the increase in delay would be less than five seconds under future conditions.
 - » A traffic signal or roundabout would be warranted in the future at this intersection, which would provide for acceptable operating conditions.
- » Memorial Drive/Sunnyslope Road: Remove one lane on each approach, add left-turn pockets.
 - » Impact: Acceptable increases in delay during the a.m. and p.m. peak hours under existing and future conditions.

The results of this analysis are summarized in Table 1.

Future Considerations

- » To create consistent facilities along each of the study corridors, the City should require that proposed developments provide facilities along project frontages to accommodate all transportation modes.
- » As future development occurs on Santa Ana Road, the City has options in designing the width of the corridor. One lane in each direction as well as space for buffered bike lanes should be provided. Space for on-street parking should also be provided where there is development frontage with access. A continuous center turn lane should be included in the cross section if there is a preponderance of frontage land use access needs. If there is only need for left-turn access at intersections, then left-turn pockets should be provided with the parking removed to provide for these turn lanes.

SEE ATTACHMENTS

- A. Level of Service Calculations
- B. Traffic Signal Warrant Analyses
- C. Collision Rate Calculations
- D. Concept Plans
- E. Evaluation of Recommended Improvements

Table 1: Intersection Delay for Existing, Future, and with Proposed Changes

		A.M.				P.M.			
MAJOR STREET	MINOR STREET	EXTG.	W/ CHG.	FUTURE	W/ CHG.	EXTG.	W/ CHG.	FUTURE	W/ CHG.
Buena Vista Rd	Miller Rd	~	N/A	✓	N/A	~	N/A	×	N/A
Buena Vista Rd	Westside Blvd	~	~	×	×	~	~	×	×
Buena Vista Rd	Locust Ave	~	~	~	✓	~	N/A	~	N/A
Santa Ana Rd	San Benito St	~	~	~	✓	~	N/A	×	N/A
Santa Ana Rd	Rustic St- McCray St	~	~	~	N/A	~	N/A	~	N/A
Santa Ana Rd	Chappell Rd	~	✓	~	N/A	~	N/A	~	N/A
Santa Ana Rd	Hwy 25	~	✓	×	×	~	~	×	×
Santa Ana Rd	Memorial Ext	N/A	N/A	~	✓	N/A	N/A	~	~
Meridian St	San Benito St	×	×	×	×	×	×	×	×
Meridian St	McCray St	~	~	~	✓	~	~	✓	~
Meridian St	Hwy 25	~	N/A	~	×	~	N/A	✓	×
Meridian St	Memorial Dr	~	~	~	✓	~	~	~	✓
Meridian St	El Toro Dr	~	~	✓	✓	~	~	~	✓
Memorial Dr	Hillcrest Rd	~	N/A	×	×	~	N/A	×	×
Memorial Dr	Sunnyslope Rd	~	~	~	~	~	~	~	~
Memorial Dr	Sunset Dr	~	N/A	~	N/A	~	N/A	~	N/A

Notes:

✓= acceptable delay

X = unacceptable delay

Shaded = signal warranted

N/A = not applicable

